[JRAL RESOURCES AGENCY OF CALIFORN
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS & GEOTHERMAL RESOURCES
1000 S. Hill Rd, Suite 116 Ventura, CA 93003-4458
Phone:(805) 654-4761 Fax:(805) 654-4765

No. T **216-0571**

REPORT ON OPERATIONS

GAS STORAGE PROJECT
"Sesnon-Frew" - Modelo (Miocene-Eocene) Formation

Roberto (Bob) Dentici
Southern California Gas Company (S4700)
555 West 5th Street, ML 17G4
Los Angeles, CA 90013

Ventura, California
November 29, 2016

Your operations at well **"Fernando Fee" 34-A**, A.P.I. No. **037-22044**, Sec. **34**, T. **03N**, R. **16W**, **SB** B.&M., **Aliso Canyon** field, in **Los Angeles** County, were witnessed on **11/14/2016**, by **Randall Morlan**, a representative of the supervisor.

The operations were performed for the purpose of **determining casing integrity**.

DECISION:

APPROVED

RM/TKC

Kenneth A. Harris Jr.
State Oil and Gas Supervisor

By _____
Patricia A. Abel, *District Deputy*

KG1128.

State of California
Department of Conservation
Division of Oil, Gas, and Geothermal Resources

No. T 216-0571
#161

INTERNAL MECHANICAL INTEGRITY TEST (MIT)
(Standard Annulus Pressure Test-SAPT)

Operator: Southern California Gas Co.					Well: "Fernando Fee" 34-A
Sec. 34	T. 03N	R. 16W	B.&M. SB	API No.: 037-22044	Field: Aliso Canyon
County: Los Angeles					Witnessed/Reviewed on: 11/14/2016

Randall Morlan , representative of the supervisor, was present from 1400 to 1730

Also present were: Walt Klingenberg

Casing record of the well:

The Internal MIT was performed for the purpose of pressure testing the 7" casing above 7447'.

☐ The Internal MIT is approved since it indicates that the 7" casing has mechanical integrity above 7447 ' at this time.

☐ The Internal MIT is not approved due to the following reasons: (specify)

INDICATE WHERE PACKER WAS SET AND HOW LONG PRESSURE WAS HELD ALONG WITH ANY BLEEDOFF DATA.

Casing: 7"
Start time: 16:14
Start pressure: 1047 psi
End Time: 17:14
End pressure: 1045 psi
Packer: 7447'

Tubing: 3-1/2"
Start time: 14:57
Start pressure: 3760 psi
End time: 15:57
End pressure: 3742
Tubing plug: 7462'

N 'RAL RESOURCES AGENCY OF CALIFORNI
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1000 S. Hill Rd, Suite 116 Ventura, CA 93003-4458
Phone:(805) 654-4761 Fax:(805) 654-4765

No. T **216-0536**

REPORT ON OPERATIONS

GAS STORAGE PROJECT
"Sesnon-Frew" - Modelo (Miocene-Eocene) Formation

Roberto (Bob) Dentici
Southern California Gas Company (S4700)
555 West 5th Street, ML 17G4
Los Angeles, CA 90013

Ventura, California
November 07, 2016

Your operations at well **"Fernando Fee" 34-A**, A.P.I. No. **037-22044**, Sec. **34**, T. **03N**, R. **16W**, **SB** B.&M., **Aliso Canyon** field, in **Los Angeles** County, were witnessed on **11/3/2016**, by **Ernest Blevins**, a representative of the supervisor.

The operations were performed for the purpose of **determining casing integrity**.

DECISION:

DEFERRED PENDING APPROVAL BY THE DIVISION'S SAFETY TEAM.

EB/TKC

Kenneth A. Harris Jr.
State Oil and Gas Supervisor

By _____
Patricia A. Abel, *District Deputy*

No. T

STATE OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS AND GEOTHERMAL RESOURCES

216-0536
#16, 3

PRESSURE BLOCK TEST

Operator So CA Gas Well Designation Fern, Fee 34 A

Sec. 34 ,T. 3N ,R. 16W B.& M. API No. 037-22044 Field Aliso Canyon

County Los Angeles Witnessed on 11-3-16. Ernie Blevins, representative

Supervisor, was present from 10:00 to 10:30, 11:00-11:30, 12:00-1515

Also present were Walt Klingenberg - Consult. w SM Easign #343 Rig

Casing record of the well 7"

The operation were performed for the purpose of Re-Work.

Pressure Test Casing

Test Packer at 0-2000' 7" Well Type Gas Injection

Casing Pressured With Polymer 8.5# Volume

Casing Pressure Start (psi) 3745 Time ~~End~~ Start 10:20 AM

Casing Pressure End (psi) 3746 ~~Start~~Time 11:20

Pressure Held 60 minutes. Total change in pressure +1 psi psi %

Test results ✓ Good No Good Inconclusive

Pressure Test ~~Tubbing~~ Casing

Bridge Plug 7" ~~Plug~~ Back to 7510' - 0' Well Type Gas Injection

Tubbing Pressured With Polymer 8.5# Volume

Tubbing Pressure Start (psi) 2858 psi Start Time 12:46

Tubbg Pressure End (psi) 2810 End Time 13:46

Pressure Held 60 minutes. Total drop in pressure -48 psi %

Test results ✓ Good No Good Inconclusive

Remarks PASS

'URAL RESOURCES AGENCY OF CALIFORN
DEPARTMENT OF CONSERVATION
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1000 S. Hill Rd, Suite 116 Ventura, CA 93003-4458
Phone:(805) 654-4761 Fax:(805) 654-4765

No. T **216-0498**

REPORT ON OPERATIONS

GAS STORAGE PROJECT
"Sesnon-Frew" - Modelo (Miocene-Eocene) Formation

Roberto (Bob) Dentici
Southern California Gas Company (S4700)
555 West 5th Street, ML 17G4
Los Angeles, CA 90013

Ventura, California
October 28, 2016

Your operations at well **"Fernando Fee" 34-A**, A.P.I. No. **037-22044**, Sec. **34**, T. **03N**, R. **16W**, **SB** B.&M., **Aliso Canyon** field, in **Los Angeles** County, were witnessed on **10/17/2016**, by **Kris Gustafson**, a representative of the supervisor.

The operations were performed for the purpose of **inspecting the blowout prevention equipment and installation**.

DECISION:

APPROVED

KG/TKC

Kenneth A. Harris Jr.
State Oil and Gas Supervisor

By _____
Patricia A. Abel, *District Deputy*

API No. 037-22044 DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES T 216-0498

BLOWOU PREVENTION EQUIPME MEMO #12,1

Operator SoCal Gas Well FF-34A Sec. 34 T. 03N R. 16W
Field Aliso Cyn County Los Angeles Spud Date

VISITS:

	Date	Engineer	Time	Operator's Rep.	Title
1st	10/17/16	K. Gustafson	(1445 to 1500)	Walt Klingenberg	Compliance Mech
2nd			(to)		

Contractor Ensign Rig # 343 Contractor's Rep. & Title

Casing record of well:

OPERATION: Testing (inspecting) the blowout prevention equipment and installation. Critical well? Y ☐ N ☒

DECISION: The blowout prevention equipment and its installation on the 7 " casing are approved.

Proposed Well Opns: Rework . MACP: psi

Hole size: " fr. ' to ', " to ' & " to '

REQUIRED BOPE CLASS: III 5M

CASING RECORD OF BOPE ANCHOR STRING

Size	Weight(s)	Grade(s)	Shoe at	CP at	Cement Details	Top of Cement Casing	Top of Cement Annulus
7"							

BOP STACK

API Symb.	Ram Size (in.)	Manufacturer	Model or Type	Vert. Bore Size (in.)	Press. Rtg.	Date Last Overhaul
A	CSO	Hydril	GK	11	5M	
Rd	27/8	Shaffer	LWS			
Rd	CSO					

TEST DATA

Gal. to Close	Recov. Time (Min.)	Calc. GPM Output	psi Drop to Close	Secs. to Close	Test Date	Test Press.
9.81					10/17	3.5M *
2.3						5M
2.3						

TOTAL: 14.41 gal

ACTUATING SYSTEM

Accumulator Unit(s) Working Pressure 3000 psi
Total Rated Pump Output gpm Fluid Level
Distance from Well Bore 50 ft. OK

	Accum. Manufacturer	Capacity	Precharge
1	Koomey Type	80 gal.	1000 psi
2		gal.	psi

CONTROL STATIONS

	Elec.	Hyd.	Pneu.
Manifold at accumulator unit		X	
Remote at Driller's station			X
Other:			

EMERG. BACKUP SYSTEM

			Press.	Wkg.Fluid
N_2 Cylinders	1	L= 5' "	2650	8.81 gal.
Other:	2	L= "	2550	8.26 gal.
	3	L= "	2550	8.26 gal.
	4	L= "	2550	8.26 gal.
	5	L= "	2600	8.34 gal.
	6	L=V "	2550	8.26 gal.
		TOTAL:	50.39	gal.

AUXILIARY EQUIPMENT

		No.	Size (in.)	Rated Press	Connections Weld	Connections Flange	Connections Thread	Test Press.
	Fill-up Line							
	Kill Line		2	5M			X	5M
	Control Valve(s)	2				X		
	Check Valve(s)	1				X		
L	Aux. Pump Cnnct.					X		
	Choke Line		3			X		
	Control Valve(s)	2	3			X		
	Pressure Gauge					X		
	Adjstble Choke(s)	2/3	2"			X		
	Bleed Line					X		
	Upper Kelly Cock							
	Lower Kelly Cock							
	Standpipe Valve							
	Stndpipe Pres. Gau.					—		
	Pipe Safety Valve		27/8					
	Internal Preventer		27/8					

HOLE FLUID MONITORING EQUIPMENT

	Alarm Type Audible	Alarm Type Visual	Class
Calibrated Mud Pit			A
Pit Level Indicator			
Pump Stroke Counter			B
Pit Level Recorder			
Flow Sensor			C
Mud Totalizer			
Calibrated Trip Tank			
Other:			

Hole Fluid Type	Weight	Storage Pits (Type & Size)
Poly HEC	8.5	750 bbls.

REMARKS AND DEFICIENCIES:

* Not witnessed by Division inspector

OGD9 (9/06)

'URAL RESOURCES AGENCY OF CALIFORN'
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DIVISION OF OIL, GAS & GEOTHERMAL RESOURCES
1000 S. Hill Rd, Suite 116 Ventura, CA 93003-4458
Phone:(805) 654-4761 Fax:(805) 654-4765

No. T **216-0516**

REPORT ON OPERATIONS

GAS STORAGE PROJECT
"Sesnon-Frew" - Modelo (Miocene-Eocene) Formation

Roberto (Bob) Dentici
Southern California Gas Company (S4700)
555 West 5th Street, ML 17G4
Los Angeles, CA 90013

Ventura, California
October 28, 2016

Your operations at well **"Fernando Fee" 34-A**, A.P.I. No. **037-22044**, Sec. **34**, T. **03N**, R. **16W**, **SB** B.&M., **Aliso Canyon** field, in **Los Angeles** County, were witnessed on **10/5/2016**, by **Chris Phillips**, a representative of the supervisor.

The operations were performed for the purpose of **determining casing integrity**.

DECISION:

APPROVED

CPH/TKC

Kenneth A. Harris Jr.
State Oil and Gas Supervisor

By P A Abel
Patricia A. Abel, *District Deputy*

KG106.

State of California
Department of Conservation
Division of Oil, Gas, and Geothermal Resources

T 216-0516
16, L

Casing and Tubing Pressure Test

Operator: So. Cal. Gas Co. Well Designation: Fernando Fee 34A

Sec. 34, T. 03N, R. 16W, S. B. B.M. API No. 037-22044 Field: Aliso Canyon

County. Los Angeles Witnessed on: 5-Oct-2016. Chris Phillips, representative

of the supervisor, was present from 0700 to 0830.

Also Present were Dave Driskill - WSM

Casing Record of the Well:

See NOI

The operations were performed for the purpose of Pressure testing 2-7/8" tubing and 7" casing

Pressure Test of the Casing

Packer/ Bridge Plug at Packer at 7483'
Casing Pressured with 8.5 #/gal KCl polymer
Casing Pressure Start PSI: 1122
Casing Pressure End PSI: 1147
Pressure Held 60 Min. Total drop in Pressure increased 25 psi 2.2 %.

Well Type Gas Storage
Volume
Start Time: 0728
End Time: 0828

Test Result: X Good ____ Not Good

Pressure Test of the Tubing

Packer/ Bridge Plug at
Tubing Pressured with
Tubing Pressure Start PSI:
Tubing Pressure End PSI:
Pressure Held ____ Min. Total drop in Pressure ____ psi ____ %.

Well Type
Volume
Start Time:
End Time:

Test Result: ____ Good ____ Not Good

Remarks: tubing plug at 7474', Sliding sleeve in open position at 7441'

DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

CHECK LIST-RECORDS RECEIVED AND WELL STATUS

Operator: **Southern California Gas Company** WELL DESIGNATION **"Fernando Fee" 34-A**

API No. **03722044** SE **34** T: **3N** R.: **16W** , **SB** B. and M.

County: **Los Angeles** FIELD: **Aliso Canyon**

Type of Notice: **Rework** **Date** **7/29/2016** **Report Number:** **P216-0169**

RECORDS RECEIVED (ATTACH PAGES IF REQUIRED)

	Date	OK	NEED	Remarks
Well Summary (OG100)				
History (OG103)				
E-Log				
Mud Log				
Dipmeter				
Directional				
Core and/or SWS				

NEW STATUS

DATE: _____

NOTICE OF RECORDS DUE

DATE: _____

DATE: _____

DATE: _____

DATE: _____

WELL STATUS INQUIRY

DATE: _____

DATE: _____

Well Stat

Change Required: _____

Change Done: _____

ABANDONMENTS/REABANDONMENTS/DRILLS/REDRILLS

CalWims Abandonment Form: _____ SURFACE INSPECTION NEEDED _____ COMPLETED _____
Date and Inspector

FINAL LETTER NEEDED _____ COMPLETED _____ Calwims DRILL/REDRILL Form _____
(Date)

ENGINEER'S CHECK LIST

T-REPORT(S) _____ OPERATOR'S NAME _____ WELL DESIGNATION _____ SIGNATURE _____

Calwims Location _____ Calwims ELEVATION: _____ CONFIDENTIAL RELEASE DATE: _____ PERMIT REQUIREMENTS MET _____

CLERICAL CHECK LIST

LOCATION CHANGE (OG165) _____ ELEVATION CHANGE (OG165) _____ RELEASE OF BOND (OG150) _____

REMARKS

RECORDS SCANNED: _____
(Date)

RECORDS APPROVED: _____
(Date and Engineer)

Modflied OGD2

AOR Datbase _____

ATURAL RESOURCES AGENCY OF CALIFOF
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS & GEOTHERMAL RESOURCES
1000 S. Hill Rd, Suite 116 Ventura, CA 93003 - 4458

No. P 216-0169

Old	New
010	010
FIELD CODE	
00	00
AREA CODE	
30	30
POOL CODE	

PERMIT TO CONDUCT WELL OPERATIONS

Gas Storage
Plugback and Suspend for One Year
"Sesnon-Frew" - Modelo (Miocene-Eocene) Formation

Ventura, California
August 10, 2016

Amy Kitson, Agent
Southern California Gas Company (S4700)
12801 Tampa Ave., SC9382
Northridge, CA 91326

Your proposal to **Rework** well **"Fernando Fee" 34-A**, A.P.I. No. **037-22044**, Section **34**, T. **03N**, R. **16W**, **SB** B. & M., **Aliso Canyon** field, **Any** area, **Sesnon-Frew** pool, **Los Angeles** County, dated **7/29/2016**, received **8/3/2016** has been examined in conjunction with records filed in this office. (Lat: **34.306156** Long: **-118.539134** Datum:**83**)

THE PROPOSAL IS APPROVED PROVIDED:

1. Blowout prevention equipment, as defined by this Division's publication No. M07, shall be installed and maintained in operating condition and meet the following minimum requirements:
   a. Class **I** **Note: work to be completed without the removal of the injection assembly.**
2. Hole fluid of a quality and in sufficient quantity to control all subsurface conditions in order to prevent blowouts shall be used.
3. A pressure test is conducted to demonstrate the mechanical integrity of the **8 5/8"** casing.
4. This well is to be taken out of service and isolated from the storage reservoir. The well shall be re-evaluated or abandoned within 1 year of the completion of the pressure testing pursuant to Order #1109 and its amendments.
5. In all other respects, the provisions of Division Order #1109 and its amendments shall remain in effect.
6. This office shall be contacted by phone prior to making any program changes and no changes are made without Division approval.
7. **THIS DIVISION SHALL BE NOTIFIED TO:**
   a. Witness a pressure test on the **8 5/8"** casing and tubing plug.

Continued on Next Page

Blanket Bond Dated: 7/6/1999
UIC Project No. 0100006
cc:

Engineer Clifford R. Knight
Office (805) 654-4761

CRK/do

Kenneth A. Harris Jr.
State Oil and Gas Supervisor

By _____ for
Patricia A. Abel, *District Deputy*

A copy of this permit and the proposal must be posted at the well site prior to commencing operations. Records for work done under this permit are due within 60 days after the work has been completed or the operations have been suspended. Issuance of this permit does not affect the Operator's responsibility to comply with other applicable state, federal, and local laws, regulations, and ordinances.

NOTE:

1. The base of the freshwater zone is at **800'±**.
2. No operation shall be undertaken or continued that will contaminate or otherwise damage the environment.
3. This permit is being issued as part of Division Order No. 1109 dated March 4, 2016. Any well that fails any of the testing must be taken out of service and isolated from the storage reservoir pursuant to the Safety Review Testing Regime.
4. The required History of Oil or Gas Well (OG103) shall include a complete description of the required pressure testing. **An updated casing and tubing diagram shall be included with the well history.**
5. **A Well Summary Report (Form OG 100)** and **Well History (Form OG 103)** shall to be submitted to the Division within 60 days after the well is drilled, reworked, plugged and abandoned, or if the work is suspended. Any additional well work will require an additional notice to be submitted to this office prior to resuming well operations.

Enclosure: **Attachment 1 to DOGGR Order 1109. Safety Review Testing Regime for the Aliso Canyon Natural Gas Storage Facility**

ATTACHMENT 1
TO DOGGR ORDER 1109

SAFETY REVIEW TESTING REGIME
FOR THE ALISO CANYON NATURAL GAS STORAGE FACILITY

This document identifies the requirements of this comprehensive safety review that shall be completed by the Southern California Gas Company (Operator) and verified by the Department of Conservation, Division of Oil, Gas, and Geothermal Resources (Division). The Operator shall use accepted industry practices and procedures.

The Division has consulted with independent technical experts from the Lawrence Berkeley, Lawrence Livermore, and Sandia National Laboratories ("National Laboratories") to develop the requirements of this facility safety review. The National Laboratories experts independently reviewed and concurred with the testing requirements for the safety review detailed below.

This comprehensive safety review requires that each of the active injection wells in the Aliso Canyon Storage facility either pass a thorough battery of tests in order to resume gas injection or be taken out of operation and isolated from the underground gas storage reservoir. Several steps, detailed below, are required in this safety review. Documentation of all testing required under this comprehensive safety review shall be provided electronically to the Division within 72 hours of completion of a test in digital (i.e. LAS) and printed (i.e. pdf) form. All pressure tests required under this comprehensive safety review shall be witnessed by Division staff. A well that is properly plugged and abandoned in accordance with Public Resources Code section 3208 is not subject to testing under this comprehensive safety review. A well that does not pass all tests must be repaired, retested, and pass all tests, or be plug and abandoned.

REQUIRED TESTS FOR EACH WELL IN THE FACILITY

Step 1: The Operator shall perform an initial casing assessment on the well consisting of temperature and noise logs.

a. Temperature Log:
A temperature survey shall be run from the surface to the packer to measure the temperature within the wellbore. A temperature survey that demonstrates no unexplained anomalous temperature changes in the well is one indication of casing integrity.

b. Noise Log:
An acoustic sensor survey capable of detecting the sound of fluid flow will be conducted the length of the well above the packer to the surface. The survey will include stops at least every 250 feet and at the midpoint of any anomaly detected by the temperature survey. The absence of anomalous sound above the packer is an indication of well integrity

Step 2: The results of the Temperature Logs and Noise Logs will be independently reviewed by Division engineers. Any unexplained abnormal findings in this set of tests shall be addressed by the Operator in one of the following ways:

a. Conduct further investigation and demonstrate to the Division's satisfaction that the abnormal finding is not an indicator of a lack mechanical integrity;
b. Remediate the well to the Division's satisfaction; or
c. With Division review and approval, remove the well from operation and isolate the well from the underground gas storage reservoir in accordance with Steps 4b through 7b below.

Necessary actions to remediate any abnormalities revealed by these tests will be reviewed by Division engineers. Once repairs or mitigations are completed, the Temperature Log and Noise Log must then be repeated on the well and reviewed by Division engineers to ensure that there are no additional abnormal test results and to confirm the issue was repaired.

Step 3: After these tests are completed on the well, and all required action has been completed, the operator shall either:

a. Conduct the additional tests and evaluations on the well, outlined in Steps 4a through 7a below, in order to gain approval for injecting gas through that well; or
b. Remove the well from operation and isolate the well from the underground gas storage reservoir in accordance with Steps 4b through 7b below.

REQUIRED TESTS IF A WELL IS INTENDED TO RESUME OPERATIONS

If Temperature and Noise Logs have been completed on a well and they indicate well integrity, and the Operator designates the well to return to injection operations, then the Operator shall perform the additional testing outlined in Steps 4a through 7a. The results of these tests will be independently reviewed by Division engineers and posted publicly. Each of the following tests requires that the production tubing be removed from the well.

Step 4a: The Operator shall conduct a **Casing Inspection log.**
The Operator shall conduct a Casing Inspection log of the well that measures the thickness of the production casing, from the surface to the bottom of the gas storage reservoir cap rock. If the inspection reveals a reduction in wall thickness, the current minimum strength of the casing will be calculated. If the current minimum strength of the casing has diminished to the point that it cannot withstand authorized operating pressures for the well plus a built-in additional safety factor of pressure, the well has failed this test. *A passing test for a casing inspection log would show no thinning of the casing that diminishes the casing's ability to contain at least 115% of the well's maximum allowable operating pressure as authorized in the current Project Approval Letter.*

Step 5a: The Operator shall conduct a **Cement Bond Log** for the well.
The Operator shall conduct a Cement Bond Log (CBL) that measures the bonding between cement and the production casing of the well, and also the bonding between the annular cement and the formation. Cement should be solidly bonded to both the well's production casing and the geologic formation to ensure a seal that prevents fluids from migrating up or down the outside of the well. *A passing test for a cement bond log shows definitive bond, as demonstrated by sonic waveform,*

between cement and casing and between cement and the gas storage formation and/or cap rock for at least 100 feet above the top of the gas storage reservoir.

Step 6a: The Operator shall conduct a **Multi-Arm Caliper Inspection** of the well. The operator shall conduct an inspection that measures any internal degradation or significant changes to the well's geometry from the surface to the top of the gas storage reservoir, using a minimum 32-arm caliper tool. If the inspection reveals a thinning or deformity of the casing, the current strength of the casing will be calculated. If the current strength of the casing has diminished, such that it cannot withstand authorized operating pressures plus a built-in safety factor of additional pressure, the well fails this inspection. *A passing test for a Multi-Arm Caliper Inspection would show no deformation or thinning of the casing that diminishes the casing from being able to properly contain at least 115% of each well's maximum operating pressure.*

Step 7a: The Operator will conduct a **Pressure Test** of the production casing and of the well once the production tubing has been reinstalled. The Operator may conduct the casing pressure test prior to reinstalling the production tubing. Using a digital recorder, the operator will conduct a liquid-filled positive pressure test within the production tubing of the well, and in the annular space between the production tubing and the casing, to determine the well's ability to withstand normal operating pressures. The production tubing will be isolated and then pressure tested. The annular space between tubing and casing will be pressure tested. This testing also evaluates the integrity of any packers, which seal the annular space between the tubing and casing. The pressure test will be one hour and begin at a pressure of 115% of the maximum operating pressure or the minimum yield strength of the casing and tubing, whichever is less. *A passing pressure test is a pressure loss not exceeding 10% for any 30 minute period during the hour long test.*

After conducting the above tests, the Operator will conduct any indicated remediation so that the well can pass these tests. All remediation will be subject to the review of Division engineers. The well would then be required to undergo the tests once again to demonstrate well integrity.

If the well passes the Casing Wall Thickness Inspection, the Cement Bond Log, the Multi-Arm Caliper inspection and the Pressure Test to the Division's satisfaction, then the Division may clear the well for use for gas injections and withdrawal, once the Division has authorized resumption of injection into the gas storage reservoir. As noted below, wells approved for operation will only be permitted to inject or withdraw gas through the production tubing.

REQUIRED ACTIONS IF THE WELL IS TO BE TAKEN OUT OF OPERATION AND ISOLATED FROM THE GAS STORAGE RESERVOIR:

If the operator elects to take a well out of service, then the following steps shall be taken to isolate the well from the gas storage reservoir:

Step 4b: The Operator shall confirm the presence of cement outside the well's external casing in the section of the well that prevents the movement of gas from the underground gas storage reservoir to shallower geologic zones above the gas storage reservoir. Existing cement bond logs and well construction

records may be used to make this confirmation. This confirmation requires concurrence from Division engineers.

Step 5b: The Operator shall install a mechanical seal or "packer" within the well's production casing and install a mechanical plug within the well's production tubing, if applicable. These seals shall be set in place near the bottom of the well, within the portion of the well surrounded by cement. This kind of seal is an industry standard practice for isolating a well from reservoir gases or fluids and will further protect the casing from internal gas pressure.

Step 6b: The Operator shall fill the well with fluid to the well's surface in order to create appropriate downward hydrostatic pressure in the well that further contributes to the integrity of the well seal.

These measures will isolate a well from the underground gas reservoir, as confirmed by National Laboratory experts. Each of the above actions is subject to review and approval by Division Engineers.

Step 7b: Once the Operator has completed steps 4b, 5b, and 6b, and the seal is in place at the bottom of the well and the well is filled with fluid above the seal, the operator shall:

a. Conduct daily gas monitoring at the surface of the non-operational well, including monitoring the area around the well perimeter and in the annular space between the plugged casing string and the outmost casing;
b. Conduct noise log, temperature log and positive pressure test every six months;
c. Conduct weekly monitoring of fluid levels in the well or, install and operate real-time pressure monitors that provide immediate notification to the operator when pressures deviate from normal in the well's interior tubing and its annular space.

The above monitoring shall be reported to Division engineers and maintained as a part of the well file. Division engineers will review all submitted information for evaluation on a regular basis to ensure that the well taken out of service has maintained safety, and the operator shall take all necessary steps maintain the safety of the well.

Any well taken out of operation cannot be approved to resume operations and gas injection until the successful completion of the battery of tests outlined above in Steps 4a through 7a (Casing Wall Thickness Inspection, the Cement Bond Log, the Multi-Arm Caliper Extension and the Pressure Test) is completed. Those tests must be successfully completed within one year of completing step 6b. If a well cannot successfully complete all necessary steps required in this safety review after one year of completing step 6b, then the well shall be properly plugged and abandoned in accordance with Public Resources Code section 3208.

REQUIREMENTS FOR WELLS RESUMING OPERATIONS IN ALISO CANYON

The Division's authorization to resume injection in the Aliso Canyon Storage Facility will be contingent on the successful completion of this comprehensive safety review. The State Oil and Gas Supervisor must confirm in writing that all wells in the facility have either completed and passed the full battery of tests required in the safety review, been taken out of service and isolated from the underground gas storage reservoir, or been properly plugged and abandoned in accordance with Public Resources Code Section 3208.

NATURAL RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

FOR DIVISION USE ONLY			
	Forms		
Bond	~~OGD114~~	~~OGD121~~	
	CAL WIMS ✓	1115 ✓	

P216-0169

NOTICE OF INTENTION TO REWORK / REDRILL WELL

Detailed instructions can be found at: www.conservation.ca.gov/dog/

In compliance with Section 3203, Division 3, Public Resources Code, notice is hereby given that it is our intention to rework ☒ / redrill ☐ (Check one) well Fernando Fee 34A, API No. 037-22044,

Sec. 34, T. 3N, R. 16W, S.B. B.&M., Aliso Canyon Field, Los Angeles County.

The complete casing record of the well (present hole), including plugs and perforations, is as follows: (Attach wellbore schematics diagram also.)

See attached wellbore schematic and completed work summary.

The total depth is: 7850 feet. The effective depth is: 7845 feet.

Present completion zone(s): Sesnon (Name). Anticipated completion zone(s): Same (Name).

Present zone pressure: storage psi. Anticipated/existing new zone pressure: storage psi.

Is this a critical well as defined in the California Code of Regulations, Title 14, Section 1720(a) (see next page)? Yes☐ No☒

For redrilling or deepening only, is a California Environmental Quality Act (CEQA) document required by a local agency? Yes☐ No☒ If yes, see next page.

The proposed work is as follows: (A complete program is preferred and may be attached.)

The SCGC plans to take this well out of operation and isolate from the gas storage reservoir as per the First Amended Safety Review Testing Regime: Steps 4b-7b.
5b - Set plug set in XN profile at 7474' and open SSD at 7441'.
6b - Circulate well with 8.5 ppg KCL brine down tbg. through SSD at 7441' and back to surface to completely fill well.
7b - With casing valve closed, pressure-up on tubing to 1000 psi. for 1 hour (will test csg., packer and tubing plug all at same time).

If well is to be redrilled or deepened, show proposed coordinates (from surface location) and true vertical depth at total depth: _____ feet _____ (Direction) and _____ feet _____ (Direction) Estimated true vertical depth: _____

Will the Field and/or Area change? Yes☐ No☒ If yes, specify New Field: _____ New Area: _____

The Division must be notified immediately of changes to the proposed operations. Failure to provide a true and accurate representation of the well and proposed operations may cause rescission of the permit.

Name of Operator: Southern California Gas Company			
Address: P. O. Box 2300		City/State: Chatsworth	Zip Code: 91313-2300
Name of Person Filing Notice: A.J. Alshammasi	Telephone Number: (818) 700-3887	Signature	Date: 7/29/16
Individual to contact for technical questions: Mike Giuliani	Telephone Number: (805) 290-2074	E-Mail Address: mike.giuiliani@interactprojects.com	

This notice and an indemnity or cash bond must be filed, and approval given, before the workover begins. (See the reverse side for bonding information.) If operations have not commenced within one year of the Division's receipt of the notice, this notice will be considered cancelled.

Rec'd 08-03-16 DOGGR Ventura.

INFORMATION FOR COMPLIANCE WITH THE CALIFORNIA ENVIRONMENTAL QUALITY ACT OF 1970 (CEQA)

If an environmental document has been prepared by the lead agency, submit a copy of the ***Notice of Determination*** or ***Notice of Exemption*** with this notice. Please note that a CEQA determination by a local jurisdiction, if required, must be complete, or the Division may not issue a permit.

CRITICAL WELL DEFINITION

As defined in the California Code of Regulations, Title 14, Section 1720 (a), "Critical well" means a well within:

(1) 300 feet of the following:
  (A) Any building intended for human occupancy that is not necessary to the operation of the well; or
  (B) Any airport runway.
(2) 100 feet of the following:
  (A) Any dedicated public street, highway or the nearest rail of an operating railway that is in general use;
  (B) Any navigable body of water or watercourse perennially covered by water;
  (C) Any public recreational facility such as a golf course, amusement park, picnic ground, campground or any other area of periodic high-density population; or
  (D) Any officially recognized wildlife preserve.

WELL OPERATIONS REQUIRING BONDING

1. Drilling, redrilling, or deepening any well.
2. Milling out or removing a casing or liner.
3. Running and cementing casing or tubing.
4. Running and cementing liners and inner liners.
5. Perforating casing in a previously unperforated interval for production, injection, testing, observation, or cementing purposes.
6. Drilling out any type of permanent plug.
7. Reentering an abandoned well having no bond.

This form may be printed from the DOGGR website at www.conservation.ca.gov/dog/

Well
Fernando Fee 34-A RD1

API #: 04-037-22044-01
Sec 34, T3N, R16W

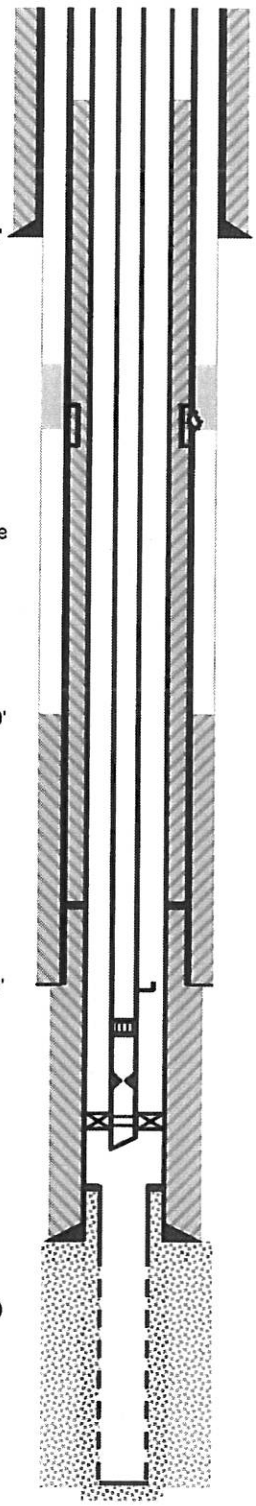
Operator: So. California Gas Co.

Lease: Fernando Fee
Field: Aliso Canyon
Status: Active Gas Storage
BFW:
USDW:

Ground Elevation: 2212' asl
Datum to Ground: 21' KB

Spud Date: 10/5/1979
Redrill (RD1) Kick-off Date: 2/14/2009
Completion Date: 3/30/2009

Junk: None



13-3/8" TOC Surface
17-1/2" Hole
7" ETOC @ 256'

Surface Casing
13-3/8", 54.5#, K-55
0' - 1003'

CMT'D w/ 1030 CF, 50 CF CMT Returns to Surface + Re-CMT'D Shoe w/ 55 CF (10 CF Away, Calc'd)

1003'

8-5/8" Homco CSG Patch 2080' - 2120'
(7.5" ID, 5/21/1991)

12-1/4" Hole

Inner Tie-back CSG
7", 26#, Hydril 513
0' - 7087'

CMT'D w/ 476 CF

8-5/8" TOC (per CBL, 12/1/1979) 4430'

Casing
8-5/8",
0' - 34' 40#, N-80
34' - 5680' 36#, N-80
5680' - 7400' 40#, N-80

CMT'D w/ 1853 CF*
(from 7652' in OH)

8-5/8" Top of Window 7400'

Production Liner
7", 26#, Hydril 513
7087' - 7650'

10" Hole

CMT'D w/ 192 CF,
Good CMT Returns @ TOL 7523'

7650'

12" Hole (7650' - 7845')

Liner
4-1/2", 11.6#, K-55
7523' - 7845'

7845'

TD 7850'
TVD (7775')
Directionally Drilled: Yes (TD is 318' W, 443' N of Surf)

Tubing
2-7/8"
0' - 7485'

1953' **8-5/8" ETOC

2093' - 2098' Holes in CSG (Calc'd 60 CF CMT SQZ'D Away**, 5/16/91)

7087' 7" TOL & TOC

7400' Redrill (RD1) KOP (from OH) into this wellbore (See History)
7403' GLMA (w/ 1.0 Dummy Valve)

7441' Sliding Sleeve

7474' On / Off Tool w/ XN Profile

7483' HES G-6 PCKR (3/21/2009)
7485' Bell Guide

Liner Perfs:
7598' - 7679' Semi-slots
7679' - 7845' 0.008" WWS

Gravel Packed w/
82 CF 30-50 resin coated
(126 CF Calc'd)

(7845' - 7850') 8" Hole

Wellbore History
Orig. Hole (OH) TD @ 7855'
(See Fernando Fee 34-A OH)
RD1 KOP @ 7400'
TD @ 7850'

Notes
*"Lost returns while CMT'ing - full returns when CMT was in place".

Top of Zone Markers	md (tvd)
A1	4470' (4465')
UDA1	6390' (6345')
LDA	7079' (7016')
MP	7340' (7270')
S1	±7586' (7512')
S4	±7675' (7601')
S8	±7787' (7713')

Prepared by: CAM (6/27/2016)
Updated by: CAM (8/2/2016)
InterAct
Rec'd 08-03-16 DOGGR Ventura.

Completed Work Summary - Fernando Fee 34A		
Step	Work Completed	Date
4b	TOC at 4430' per CBL - Good bond across S-1/packer to well above MP.	12/1/1979
5b	Packer set at 7483'.	3/21/2009

Casing Pressure Test Safety Check (1000 psi)

Well	Packer Depth MD/TVD	Casing Size/Grade/Weight	Depth MD	Burst PSI	85% of Burst PSI	Pressure at Depth w/1000 psi Surface Pressure	Press < 85% of Burst
Fernando Fee 34A	7483'/7411'	7", 26#, N-80	7483	7240	6154	4307	Yes
Porter 37A	7330'/7246'	8-5/8", 40#, N-80	2015	7300	6205	1891	Yes
		8-5/8", 36#, N-80	5582	6490	5517	3467	Yes
		8-5/8", 40#, N-80	7330	7300	6205	4240	Yes
Porter 32D	7293'/7195'	8-5/8", 36#, K-55	5749	4460	3791	3541	Yes
		8-5/8", 36#, N-80	7293	6490	5517	4224	Yes
Sesnon Fee 4	8930'/8930'	7", 29#, N-80	52	8160	6936	1023	Yes
		7", 23#, N-80	6103	6340	5389	3698	Yes
		7", 26#, N-80	8146	7240	6154	4601	Yes
		7", 29#, N-80	8930	8160	6936	4947	Yes
Sesnon Fee 8	8953'/8953'	7", 29#, N-80	151	8160	6936	1067	Yes
		7", 23#, N-80	6541	6340	5389	3891	Yes
		7", 26#, N-80	8598	7240	6154	4800	Yes
		7", 29#, N-80	8953	8160	6936	4957	Yes
Porter 69E	7155'/7005'	9-5/8", 47#, N-80	7155	6870	5840	4163	Yes

DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

CHECK LIST-RECORDS RECEIVED AND WELL STATUS

Operator: **Southern California Gas Company** WELL DESIGNATION **"Fernando Fee" 34-A**

API No. **03722044** SE **34** T: **3N** R.: **16W** , **SB** B. and M.

County: **Los Angeles** FIELD: **Aliso Canyon**

Type of Notice: **Rework** **Date** **7/11/2016** **Report Number:** **P216-0127**

RECORDS RECEIVED (ATTACH PAGES IF REQUIRED)

	Date	OK	NEED	Remarks
Well Summary (OG100)				N/A
History (OG103)				N/A
E-Log				
Mud Log				
Dipmeter				
Directional				
Core and/or SWS				

NEW STATUS

DATE: 8-10-16

NOTICE OF RECORDS DUE

DATE: _____

DATE: _____

DATE: _____

DATE: _____

WELL STATUS INQUIRY

DATE: _____

DATE: _____

Well Stat

Change Required: _____

Change Done: _____

ABANDONMENTS/REABANDONMENTS/DRILLS/REDRILLS

CalWims Abandonment Form: _____ SURFACE INSPECTION NEEDED _____ COMPLETED _____
Date and Inspector

FINAL LETTER NEEDED _____ COMPLETED _____ Calwims DRILL/REDRILL Form _____
(Date)

ENGINEER'S CHECK LIST

T-REPORT(S) _____ OPERATOR'S NAME _____ WELL DESIGNATION _____ SIGNATURE _____

Calwims Location _____ Calwims ELEVATION: _____ CONFIDENTIAL RELEASE DATE: _____ PERMIT REQUIREMENTS MET _____

CLERICAL CHECK LIST

LOCATION CHANGE (OG165) _____ ELEVATION CHANGE (OG165) _____ RELEASE OF BOND (OG150) _____

REMARKS

RECORDS SCANNED: _____
(Date)

RECORDS APPROVED: _____
(Date and Engineer)

Modflied OGD2

AOR Datbase _____

URAL RESOURCES AGENCY OF CALIFORN
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS & GEOTHERMAL RESOURCES
1000 S. Hill Rd, Suite 116 Ventura, CA 93003 - 4458

No. P 216-0127

Old	New
010	010
FIELD CODE	
00	00
AREA CODE	
30	30
POOL CODE	

PERMIT TO CONDUCT WELL OPERATIONS

Gas Storage
"Sesnon-Frew" - Modelo (Miocene-Eocene) Formation

Ventura, California
July 15, 2016

Amy Kitson, Agent
Southern California Gas Company (S4700)
12801 Tampa Ave., SC9382
Northridge, CA 91326

Your proposal to **Rework** well **"Fernando Fee" 34-A**, A.P.I. No. **037-22044**, Section **34**, T. **03N**, R. **16W**, **SB** B. & M., **Aliso Canyon** field, **Any** area, **Sesnon-Frew** pool, **Los Angeles** County, dated **7/11/2016**, received **7/12/2016** has been examined in conjunction with records filed in this office. (Lat: **34.306156** Long: **-118.539134** Datum:**83**)

THE PROPOSAL IS APPROVED PROVIDED:

1. Blowout prevention equipment, as defined by this Division's publication No. M07, shall be installed and maintained in operating condition and meet the following minimum requirements:
   a. Class **III 5M** on the **7"** casing.
2. Hole fluid of a quality and in sufficient quantity to control all subsurface conditions in order to prevent blowouts shall be used.
3. Blowout prevention practice drills are conducted at least weekly and recorded on the tour sheet. A practice drill may be required at the time of the test/inspection.
4. A Temperature and Noise log are run on the well from the packer to surface.
5. **A Casing Wall Thickness Inspection, Cement Bond Log, and a Multi-Arm Caliper Inspection** shall be performed to demonstrate that the **7"**casing has integrity.
6. Prior to commencing injection, a pressure test is conducted to demonstrate the mechanical integrity of the **7"** casing.
7. Injection shall be through tubing and packer only. Injection or withdrawal through the casing is not permitted.
8. In all other respects, the provisions of Division Order #1109 and its amendments shall remain in effect.
9. This office shall be contacted by phone prior to making any program changes and no changes are made without Division approval.
10. **THIS DIVISION SHALL BE NOTIFIED TO:**
    a. Inspect the installed blowout prevention equipment prior to commencing **downhole** operations.
    b. Witness a pressure test of the **7"** casing prior to commencing injection.

Continued on Next Page

Kenneth A. Harris Jr.
State Oil and Gas Supervisor

Blanket Bond Dated: 7/6/1999
UIC Project No. 0100006

Engineer Kris Gustafson
Office (805) 654-4761

By Clifford Knight for
Patricia A. Abel, *District Deputy*

KG/kg

A copy of this permit and the proposal must be posted at the well site prior to commencing operations. Records for work done under this permit are due within 60 days after the work has been completed or the operations have been suspended. Issuance of this permit does not affect the Operator's responsibility to comply with other applicable state, federal, and local laws, regulations, and ordinances.

NOTE:

1. The base of the freshwater zone is at **800'±**.
2. No operation shall be undertaken or continued that will contaminate or otherwise damage the environment.
3. This permit is being issued as part of Division Order No. 1109 dated March 4, 2016. Any well that fails any of the testing must be taken out of service and isolated from the storage reservoir pursuant to the Safety Review Testing Regime.
4. The required History of Oil or Gas Well (OG103) shall include a complete description of the required pressure testing. **An updated casing and tubing diagram shall be included with the well history.**
5. **A Well Summary Report (Form OG 100)** and **Well History (Form OG 103)** shall to be submitted to the Division within 60 days after the well is drilled, reworked, plugged and abandoned, or if the work is suspended. Any additional well work will require an additional notice to be submitted to this office prior to resuming well operations.

Enclosure: **Attachment 1 to DOGGR Order 1109. Safety Review Testing Regime for the Aliso Canyon Natural Gas Storage Facility**

ATTACHMENT 1
TO DOGGR ORDER 1109

SAFETY REVIEW TESTING REGIME
FOR THE ALISO CANYON NATURAL GAS STORAGE FACILITY

This document identifies the requirements of this comprehensive safety review that shall be completed by the Southern California Gas Company (Operator) and verified by the Department of Conservation, Division of Oil, Gas, and Geothermal Resources (Division). The Operator shall use accepted industry practices and procedures.

The Division has consulted with independent technical experts from the Lawrence Berkeley, Lawrence Livermore, and Sandia National Laboratories ("National Laboratories") to develop the requirements of this facility safety review. The National Laboratories experts independently reviewed and concurred with the testing requirements for the safety review detailed below.

This comprehensive safety review requires that each of the active injection wells in the Aliso Canyon Storage facility either pass a thorough battery of tests in order to resume gas injection or be taken out of operation and isolated from the underground gas storage reservoir. Several steps, detailed below, are required in this safety review. Documentation of all testing required under this comprehensive safety review shall be provided electronically to the Division within 72 hours of completion of a test in digital (i.e. LAS) and printed (i.e. pdf) form. All pressure tests required under this comprehensive safety review shall be witnessed by Division staff. A well that is properly plugged and abandoned in accordance with Public Resources Code section 3208 is not subject to testing under this comprehensive safety review. A well that does not pass all tests must be repaired, retested, and pass all tests, or be plug and abandoned.

REQUIRED TESTS FOR EACH WELL IN THE FACILITY

Step 1: The Operator shall perform an initial casing assessment on the well consisting of temperature and noise logs.

a. Temperature Log:
   A temperature survey shall be run from the surface to the packer to measure the temperature within the wellbore. A temperature survey that demonstrates no unexplained anomalous temperature changes in the well is one indication of casing integrity.

b. Noise Log:
   An acoustic sensor survey capable of detecting the sound of fluid flow will be conducted the length of the well above the packer to the surface. The survey will include stops at least every 250 feet and at the midpoint of any anomaly detected by the temperature survey. The absence of anomalous sound above the packer is an indication of well integrity

Step 2: The results of the Temperature Logs and Noise Logs will be independently reviewed by Division engineers. Any unexplained abnormal findings in this set of tests shall be addressed by the Operator in one of the following ways:

a. Conduct further investigation and demonstrate to the Division's satisfaction that the abnormal finding is not an indicator of a lack mechanical integrity;
b. Remediate the well to the Division's satisfaction; or
c. With Division review and approval, remove the well from operation and isolate the well from the underground gas storage reservoir in accordance with Steps 4b through 7b below.

Necessary actions to remediate any abnormalities revealed by these tests will be reviewed by Division engineers. Once repairs or mitigations are completed, the Temperature Log and Noise Log must then be repeated on the well and reviewed by Division engineers to ensure that there are no additional abnormal test results and to confirm the issue was repaired.

Step 3: After these tests are completed on the well, and all required action has been completed, the operator shall either:

a. Conduct the additional tests and evaluations on the well, outlined in Steps 4a through 7a below, in order to gain approval for injecting gas through that well; or
b. Remove the well from operation and isolate the well from the underground gas storage reservoir in accordance with Steps 4b through 7b below.

REQUIRED TESTS IF A WELL IS INTENDED TO RESUME OPERATIONS

If Temperature and Noise Logs have been completed on a well and they indicate well integrity, and the Operator designates the well to return to injection operations, then the Operator shall perform the additional testing outlined in Steps 4a through 7a. The results of these tests will be independently reviewed by Division engineers and posted publicly. Each of the following tests requires that the production tubing be removed from the well.

Step 4a: The Operator shall conduct a **Casing Inspection log.**
The Operator shall conduct a Casing Inspection log of the well that measures the thickness of the production casing, from the surface to the bottom of the gas storage reservoir cap rock. If the inspection reveals a reduction in wall thickness, the current minimum strength of the casing will be calculated. If the current minimum strength of the casing has diminished to the point that it cannot withstand authorized operating pressures for the well plus a built-in additional safety factor of pressure, the well has failed this test. *A passing test for a casing inspection log would show no thinning of the casing that diminishes the casing's ability to contain at least 115% of the well's maximum allowable operating pressure as authorized in the current Project Approval Letter.*

Step 5a: The Operator shall conduct a **Cement Bond Log** for the well.
The Operator shall conduct a Cement Bond Log (CBL) that measures the bonding between cement and the production casing of the well, and also the bonding between the annular cement and the formation. Cement should be solidly bonded to both the well's production casing and the geologic formation to ensure a seal that prevents fluids from migrating up or down the outside of the well. *A passing test for a cement bond log shows definitive bond, as demonstrated by sonic waveform,*

between cement and casing and between cement and the gas storage formation and/or cap rock for at least 100 feet above the top of the gas storage reservoir.

Step 6a: The Operator shall conduct a **Multi-Arm Caliper Inspection** of the well. The operator shall conduct an inspection that measures any internal degradation or significant changes to the well's geometry from the surface to the top of the gas storage reservoir, using a minimum 32-arm caliper tool. If the inspection reveals a thinning or deformity of the casing, the current strength of the casing will be calculated. If the current strength of the casing has diminished, such that it cannot withstand authorized operating pressures plus a built-in safety factor of additional pressure, the well fails this inspection. *A passing test for a Multi-Arm Caliper Inspection would show no deformation or thinning of the casing that diminishes the casing from being able to properly contain at least 115% of each well's maximum operating pressure.*

Step 7a: The Operator will conduct a **Pressure Test** of the production casing and of the well once the production tubing has been reinstalled. The Operator may conduct the casing pressure test prior to reinstalling the production tubing. Using a digital recorder, the operator will conduct a liquid-filled positive pressure test within the production tubing of the well, and in the annular space between the production tubing and the casing, to determine the well's ability to withstand normal operating pressures. The production tubing will be isolated and then pressure tested. The annular space between tubing and casing will be pressure tested. This testing also evaluates the integrity of any packers, which seal the annular space between the tubing and casing. The pressure test will be one hour and begin at a pressure of 115% of the maximum operating pressure or the minimum yield strength of the casing and tubing, whichever is less. *A passing pressure test is a pressure loss not exceeding 10% for any 30 minute period during the hour long test.*

After conducting the above tests, the Operator will conduct any indicated remediation so that the well can pass these tests. All remediation will be subject to the review of Division engineers. The well would then be required to undergo the tests once again to demonstrate well integrity.

If the well passes the Casing Wall Thickness Inspection, the Cement Bond Log, the Multi-Arm Caliper inspection and the Pressure Test to the Division's satisfaction, then the Division may clear the well for use for gas injections and withdrawal, once the Division has authorized resumption of injection into the gas storage reservoir. As noted below, wells approved for operation will only be permitted to inject or withdraw gas through the production tubing.

REQUIRED ACTIONS IF THE WELL IS TO BE TAKEN OUT OF OPERATION AND ISOLATED FROM THE GAS STORAGE RESERVOIR:

If the operator elects to take a well out of service, then the following steps shall be taken to isolate the well from the gas storage reservoir:

Step 4b: The Operator shall confirm the presence of cement outside the well's external casing in the section of the well that prevents the movement of gas from the underground gas storage reservoir to shallower geologic zones above the gas storage reservoir. Existing cement bond logs and well construction

records may be used to make this confirmation. This confirmation requires concurrence from Division engineers.

Step 5b: The Operator shall install a mechanical seal or "packer" within the well's production casing and install a mechanical plug within the well's production tubing, if applicable. These seals shall be set in place near the bottom of the well, within the portion of the well surrounded by cement. This kind of seal is an industry standard practice for isolating a well from reservoir gases or fluids and will further protect the casing from internal gas pressure.

Step 6b: The Operator shall fill the well with fluid to the well's surface in order to create appropriate downward hydrostatic pressure in the well that further contributes to the integrity of the well seal.

These measures will isolate a well from the underground gas reservoir, as confirmed by National Laboratory experts. Each of the above actions is subject to review and approval by Division Engineers.

Step 7b: Once the Operator has completed steps 4b, 5b, and 6b, and the seal is in place at the bottom of the well and the well is filled with fluid above the seal, the operator shall:

a. Conduct daily gas monitoring at the surface of the non-operational well, including monitoring the area around the well perimeter and in the annular space between the plugged casing string and the outmost casing;
b. Conduct noise log, temperature log and positive pressure test every six months;
c. Conduct weekly monitoring of fluid levels in the well or, install and operate real-time pressure monitors that provide immediate notification to the operator when pressures deviate from normal in the well's interior tubing and its annular space.

The above monitoring shall be reported to Division engineers and maintained as a part of the well file. Division engineers will review all submitted information for evaluation on a regular basis to ensure that the well taken out of service has maintained safety, and the operator shall take all necessary steps maintain the safety of the well.

Any well taken out of operation cannot be approved to resume operations and gas injection until the successful completion of the battery of tests outlined above in Steps 4a through 7a (Casing Wall Thickness Inspection, the Cement Bond Log, the Multi-Arm Caliper Extension and the Pressure Test) is completed. Those tests must be successfully completed within one year of completing step 6b. If a well cannot successfully complete all necessary steps required in this safety review after one year of completing step 6b, then the well shall be properly plugged and abandoned in accordance with Public Resources Code section 3208.

REQUIREMENTS FOR WELLS RESUMING OPERATIONS IN ALISO CANYON

The Division's authorization to resume injection in the Aliso Canyon Storage Facility will be contingent on the successful completion of this comprehensive safety review. The State Oil and Gas Supervisor must confirm in writing that all wells in the facility have either completed and passed the full battery of tests required in the safety review, been taken out of service and isolated from the underground gas storage reservoir, or been properly plugged and abandoned in accordance with Public Resources Code Section 3208.

Rec'd 07-12-16 DOGGR Ventura.

NATURAL RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

FOR DIVISION USE ONLY		
	Forms	
Bond	~~OGD114~~	OGD121
	CALV WIMS	115V

P216-0127

NOTICE OF INTENTION TO REWORK / REDRILL WELL

Detailed instructions can be found at: www.conservation.ca.gov/dog/

In compliance with Section 3203, Division 3, Public Resources Code, notice is hereby given that it is our intention to rework ☒ / redrill ☐ (Check one) well FF 34A, API No. 037-22044-01,

Sec. 34, T. 3N, R. 16W, S.B. B.&M., Aliso Canyon Field, Los Angeles County.

The complete casing record of the well (present hole), including plugs and perforations, is as follows: (Attach wellbore schematics diagram also.)

See attached wellbore schematic

The total depth is: 7850 feet. The effective depth is: 7845 feet.

Present completion zone(s): S1,S4, S8 (Name). Anticipated completion zone(s): None (Name).

Present zone pressure: Storage psi. Anticipated/existing new zone pressure: Storage psi.

Is this a critical well as defined in the California Code of Regulations, Title 14, Section 1720(a) (see next page)? Yes☐ No☒

For redrilling or deepening only, is a California Environmental Quality Act (CEQA) document required by a local agency? Yes☐ No☒ If yes, see next page.

The proposed work is as follows: (A complete program is preferred and may be attached.)

See attached program for Idlement Procedure

If well is to be redrilled or deepened, show proposed coordinates (from surface location) and true vertical depth at total depth: _____ feet _____ (Direction) and _____ feet _____ (Direction) Estimated true vertical depth: _____

Will the Field and/or Area change? Yes☐ No☒ If yes, specify New Field: _____ New Area: _____

The Division must be notified immediately of changes to the proposed operations. Failure to provide a true and accurate representation of the well and proposed operations may cause rescission of the permit.

Name of Operator			
Southern California Gas Company			
Address		City/State	Zip Code
P. O. Box 2300		Chatsworth	91313-2300
Name of Person Filing Notice	Telephone Number:	Signature	Date
Ella Lein	661.340.4250	E.L.	7/11/2016
Individual to contact for technical questions:	Telephone Number:	E-Mail Address:	
Ella Lein	661.340.4250	elein@semprautilities.com	

This notice and an indemnity or cash bond must be filed, and approval given, before the workover begins. (See the reverse side for bonding information.) If operations have not commenced within one year of the Division's receipt of the notice, this notice will be considered cancelled.

INFORMATION FOR COMPLIANCE WITH THE CALIFORNIA ENVIRONMENTAL QUALITY ACT OF 1970 (CEQA)

If an environmental document has been prepared by the lead agency, submit a copy of the ***Notice of Determination*** or ***Notice of Exemption*** with this notice. Please note that a CEQA determination by a local jurisdiction, if required, must be complete, or the Division may not issue a permit.

CRITICAL WELL DEFINITION

As defined in the California Code of Regulations, Title 14, Section 1720 (a), "Critical well" means a well within:

(1) 300 feet of the following:
  (A) Any building intended for human occupancy that is not necessary to the operation of the well; or
  (B) Any airport runway.
(2) 100 feet of the following:
  (A) Any dedicated public street, highway or the nearest rail of an operating railway that is in general use;
  (B) Any navigable body of water or watercourse perennially covered by water;
  (C) Any public recreational facility such as a golf course, amusement park, picnic ground, campground or any other area of periodic high-density population; or
  (D) Any officially recognized wildlife preserve.

WELL OPERATIONS REQUIRING BONDING

1. Drilling, redrilling, or deepening any well.
2. Milling out or removing a casing or liner.
3. Running and cementing casing or tubing.
4. Running and cementing liners and inner liners.
5. Perforating casing in a previously unperforated interval for production, injection, testing, observation, or cementing purposes.
6. Drilling out any type of permanent plug.
7. Reentering an abandoned well having no bond.

This form may be printed from the DOGGR website at www.conservation.ca.gov/dog/

Rec'd 07-12-16 DOGGR Ventura.

Well

Fernando Fee 34-A RD1 CURRENT

API #: 04-037-22044-01
Sec 34, T3N, R16W

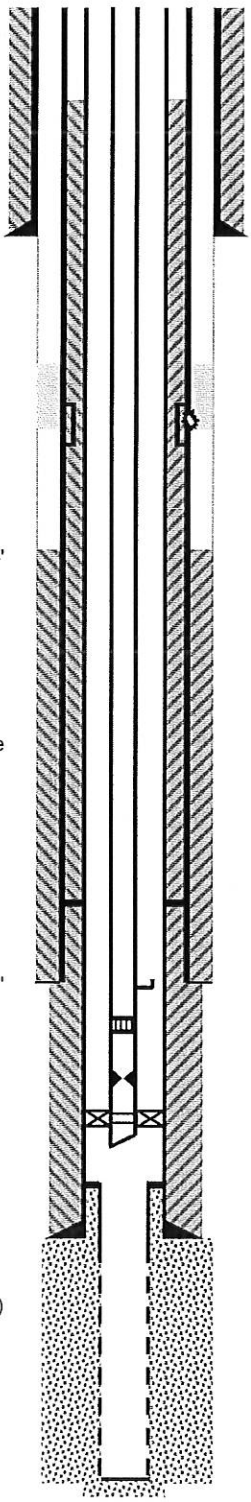
Operator: So. California Gas Co.

Lease: Fernando Fee
Field: Aliso Canyon
Status: Active Gas Storage
BFW:
USDW:

Ground Elevation: 2212' asl
Datum to Ground: 21' KB

Spud Date: 10/5/1979
Redrill (RD1) Kick-off Date: 2/14/2009
Completion Date: 3/30/2009

Junk: None



13-3/8" TOC Surface
17-1/2" Hole
7" ETOC @ 256'

Surface Casing
13-3/8", 54.5#, K-55
0' - 1003'

CMT'D w/ 1030 CF, 50 CF CMT Returns to Surface + Re-CMT'D Shoe w/ 55 CF (10 CF Away, Calc'd)

1003'

8-5/8" Homco CSG Patch 2080' - 2120' (7.5" ID, 5/21/1991)

8-5/8" ETOC 3256'

Inner Tie-back CSG
7", 26#, Hydril 513
0' - 7087'

CMT'D w/ 476 CF

12-1/4" Hole

Casing
8-5/8",
0' - 34' 40#, N-80
34' - 5680' 36#, N-80
5680' - 7400' 40#, N-80

CMT'D w/ 1853 CF*
(from 7652' in OH)

8-5/8" Top of Window 7400'

Production Liner
7", 26#, Hydril 513
7087' - 7650'

10" Hole

CMT'D w/ 192 CF,
Good CMT Returns @ TOL 7523'

7650'

12" Hole (7650' - 7845')

Liner
4-1/2", 11.6#, K-55
7523' - 7845'

7845'

TD 7850'
TVD (7775')
Directionally Drilled: Yes (TD is 318' W, 443' N of Surf)

Tubing
2-7/8"
0' - 7485'

1953' **8-5/8" ETOC

2093' - 2098' Holes in CSG (Calc'd 60 CF CMT SQZ'D Away**, 5/16/91)

7087' 7" TOL & TOC

7400' Redrill (RD1) KOP (from OH) into this wellbore (See History)
7403' GLMA (w/ 1.0 Dummy Valve)

7441' Sliding Sleeve

7474' On / Off Tool w/ XN Profile

7483' HES G-6 PCKR
7485' Bell Guide

Liner Perfs:
7598' - 7679' Semi-slots
7679' - 7845' 0.008" WWS

Gravel Packed w/
82 CF 30-50 resin coated
(126 CF Calc'd)

(7845' - 7850') 8" Hole

Wellbore History
Orig. Hole (OH) TD @ 7855'
(See Fernando Fee 34-A OH)
RD1 KOP @ 7400'
TD @ 7850'

Notes
*"Lost returns while CMT'ing - full returns when CMT was in place".

Top of Zone Markers	md (tvd)
A1	4470' (4465')
UDA1	6390' (6345')
LDA	7079' (7016')
MP	7340' (7270')
S1	±7586' (7512')
S4	±7675' (7601')
S8	±7787' (7713')

Prepared by: CAM (6/27/2016)

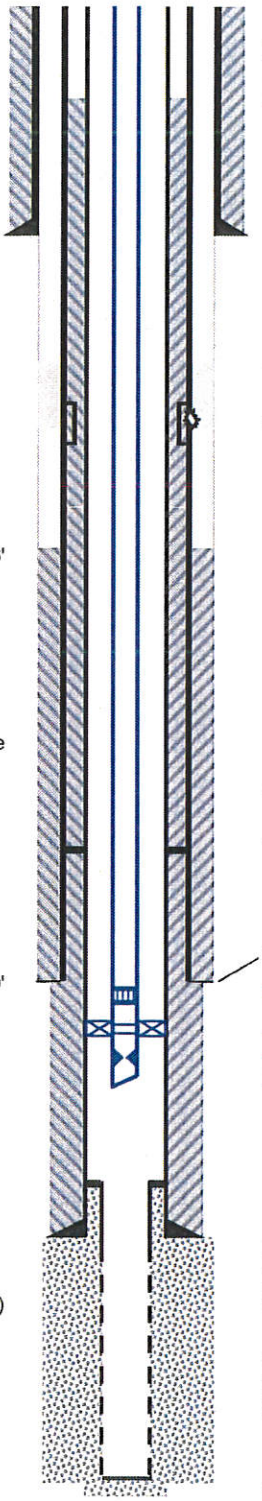
InterAct

Rec'd 07-12-16 DOGGR Ventura.

Well
Fernando Fee 34-A RD1

API #: 04-037-22044-01
Sec 34, T3N, R16W

Proposed



13-3/8" TOC Surface
17-1/2" Hole
7" ETOC @ 256'

Surface Casing
13-3/8", 54.5#, K-55
0' - 1003'

CMT'D w/ 1030 CF, 50 CF CMT Returns to Surface + Re-CMT'D Shoe w/ 55 CF (10 CF Away, Calc'd)

1003'

8-5/8" Homco CSG Patch 2080' - 2120'
(7.5" ID, 5/21/1991)

8-5/8" ETOC 3256'

Inner Tie-back CSG
7", 26#, Hydril 513
0' - 7087'

CMT'D w/ 476 CF

12-1/4" Hole

Casing
8-5/8",
0' - 34' 40#, N-80
34' - 5680' 36#, N-80
5680' - 7400' 40#, N-80

CMT'D w/ 1853 CF*
(from 7652' in OH)

8-5/8" Top of Window 7400'

Production Liner
7", 26#, Hydril 513
7087' - 7650'

10" Hole

CMT'D w/ 192 CF,
Good CMT Returns @ TOL 7523'

7650'

12" Hole (7650' - 7845')

Liner
4-1/2", 11.6#, K-55
7523' - 7845'

7845'

TD 7850'
TVD (7775')
Directionally Drilled: Yes (TD is 318' W, 443' N of Surf)

Tubing
3-1/2", 9.3#, L-80
0' - 7460'

1953' **8-5/8" ETOC

2093' - 2098' Holes in CSG (Calc'd 60 CF CMT SQZ'D Away**, 5/16/91)

7457' "XN" No-Go Nipple

7087' 7" TOL & TOC

7400' Redrill (RD1) KOP (from OH) into this wellbore (See History)

7403' Sliding Sleeve (opens down)

7439' - 7447' 7" Mechanical PCKR
7457' "XN" No-Go Nipple
7460' Wire-line Re-entry Guide

Liner Perfs:
7598' - 7679' Semi-slots
7679' - 7845' 0.008" WWS

Gravel Packed w/
82 CF 30-50 resin coated
(126 CF Calc'd)

(7845' - 7850') 8" Hole

Operator: So. California Gas Co.

Lease: Fernando Fee
Field: Aliso Canyon
Status: Active Gas Storage
BFW:
USDW:

Ground Elevation: 2212' asl
Datum to Ground: 21' KB

Spud Date: 10/5/1979
Redrill (RD1) Kick-off Date: 2/14/2009
Completion Date: 3/30/2009

Junk: None

Wellbore History
Orig. Hole (OH) TD @ 7855'
(See Fernando Fee 34-A OH)
RD1 KOP @ 7400'
TD @ 7850'

Notes
*"Lost returns while CMT'ing - full returns when CMT was in place".

Top of Zone Markers	md (tvd)
A1	4470' (4465')
UDA1	6390' (6345')
LDA	7079' (7016')
MP	7340' (7270')
S1	±7586' (7512')
S4	±7675' (7601')
S8	±7787' (7713')

Prepared by: CAM (6/27/2016)
Updated by: LD (7/11/2016)

InterAct

Rec'd 07-12-16 DOGGR Ventura.

Well

Fernando Fee 34-A RD1

API #: 04-037-22044-01
Sec 34, T3N, R16W

Production Casing Pressure Test - Program

Operator: So. California Gas Co.

Lease: Fernando Fee
Field: Aliso Canyon
Status: Active Gas Storage
BFW:
USDW:

Ground Elevation: 2212' asl
Datum to Ground: 21' KB

Spud Date: 10/5/1979
Redrill (RD1) Kick-off Date: 2/14/2009
Completion Date: 3/30/2009

Junk: None

13-3/8" TOC Surface

17-1/2" Hole

7" ETOC @ 256'

Surface Casing
13-3/8", 54.5#, K-55
0' - 1003'

CMT'D w/ 1030 CF, 50 CF
CMT Returns to Surface
+ Re-CMT'D Shoe w/ 55 CF
(10 CF Away, Calc'd)

1003'

7" Test Packer (COE @ 2000')

TEST 2000' to Surface - 3625 psi
TEST 2000' to 7520' - 2825 psi

**8-5/8" ETOC 1953'

8-5/8" Homco CSG Patch 2080' - 2120'
(7.5" ID, 5/21/1991)

2093' - 2098' Holes in CSG (Calc'd
60 CF CMT SQZ'D Away**, 5/16/91)

8-5/8" ETOC 3256'

Inner Tie-back CSG
7", 26#, Hydril 513
0' - 7087'

CMT'D w/ 476 CF

12-1/4" Hole

Casing
8-5/8",
0' - 34' 40#, N-80
34' - 5680' 36#, N-80
5680' - 7400' 40#, N-80

CMT'D w/ 1853 CF*
(from 7652' in OH)

8-5/8" Top of Window 7400'

7087' 7" TOL & TOC

7400' Redrill (RD1) KOP (from OH) into this wellbore (See History)

Production Liner
7", 26#, Hydril 513
7087' - 7650'

10" Hole

CMT'D w/ 192 CF,
Good CMT Returns @ TOL 7523'

7650'

7520' Retrievable Bridge Plug

12" Hole (7650' - 7845')

Liner Perfs:
7598' - 7679' Semi-slots
7679' - 7845' 0.008" WWS

Gravel Packed w/
82 CF 30-50 resin coated
(126 CF Calc'd)

Liner
4-1/2", 11.6#, K-55
7523' - 7845'

7845'

(7845' - 7850') 8" Hole

TD 7850'
TVD (7775')
Directionally Drilled: Yes (TD is 318' W, 443' N of Surf)

Wellbore History
Orig. Hole (OH) TD @ 7855'
(See Fernando Fee 34-A OH)
RD1 KOP @ 7400'
TD @ 7850'

Notes
*"Lost returns while CMT'ing - full returns when CMT was in place".

Top of Zone Markers	md (tvd)
A1	4470' (4465')
UDA1	6390' (6345')
LDA	7079' (7016')
MP	7340' (7270')
S1	±7586' (7512')
S4	±7675' (7601')
S8	±7787' (7713')

Prepared by: CAM (6/27/2016)
Updated by: LD (7/11/2016)

InterAct

Rec'd 07-12-16 DOGGR Ventura.

Well: FF-34A

		External Casing Backup Pressure			Pressure Test Net Burst Pressure @ Depth								Tubing Leak Net Burst Pressure @ Depth		
Depth (TVD)	85% of Burst Strength	Fluid / Formation Pressure Gradient	External Casing Backup Pressure	Internal Water Hydrostatic	1	2	3	4	5	6	7	Final	Gas-Filled Annulus	Test Pressuree > 85% of Burst	Test Pressure < Tubing Leak - Net Burst (Gas-filled annulus)
				Surface Test Pressure	2825	3625							3625		
				Test Packer Depth	7515	2000									
				Test Down Casing or Tubing	Casing	Casing	Casing	Casing	Casing	Casing	Casing	Casing			
				Bridge Plug Depth											
0	6154	0.00	0	0	2825	3625							3625		
500	6154	0.00	0	221	3046	3846							3670		
1000	6154	0.00	0	442	3267	4067							3716		
1500	6154	0.00	0	663	3488	4288							3761		
2000	6154	0.00	0	884	3709	4509							3806		
2500	6154	0.00	0	1105	3930	-							3852		
3000	6154	0.00	0	1326	4151	-							3897		
3411	6154	0.00	0	1508	4333	-							3934		
4000	6154	0.00	0	1768	4593	-							3988		
4500	6154	0.00	0	1989	4814	-							4033		
4968	6154	0.00	0	2196	5021	-							4075		
5500	6154	0.00	0	2431	5256	-							4123		
6000	6154	0.00	0	2652	5477	-							4169		
6500	6154	0.00	0	2873	5698	-							4214		
7515	6154	0.00	0	3322	6147	-							4306		
				0.442 psi/ft int. grad.									0.091 psi/ft int. grad.		

Rec'd 07-12-16 DOGGR Ventura.

SoCal Gas Company

SoCalGas
A Sempra Energy utility

Well Operations Procedure

FF 34A

Aliso Canyon

Storage Integrity Management Program

7/05/2016

Version 1

Primary Engineer:	Ella Lein	818 700-3676 (ofc)/661 340-4250 (mobile)
Alternate Engineer:	Brian Vlasko	818 700-3897 (ofc)/714 655-9506 (mobile)
Engineering Supervisor:	Jose Iguaz	818 700-3889 (ofc)/661 384-5337 (mobile)
Well Site Supervisor:	Jeff Mosier	661 706-0672 (mobile)
Well Work Superintendent:	Mike Volkmar	562 685-3810 (mobile)

Objective:

The intent of this program is to inspect the well integrity and remediate identified conditions as part of the Storage Integrity Management Program (SIMP). This project will include pulling 3-1/2" completion string, running casing inspection logs, pressure testing casing and well laterals, installing a new completion string, converting well to tubing flow, and installing pressure monitors. Baseline assessment data will be gathered on vertical casing pipe and other well components.

Well Data:

API #:	037-22044-01		
Datum:	2212'		
KB to GL:	21'		
MD:	7,850'		
TVD:	7775'		
PBMD:	7,845'	**Nature of Plug Back:**	Bottom of Liner

Geologic Markers:

A1 4470' (4465') / MD (TVD)	S1 ~7586' (7512') / MD (TVD)
UDA1 6390' (6345') / MD (TVD)	S4 ~7675' (7601') / MD (TVD)
LDA 7079' (7016') / MD (TVD)	S8 ~7787' (7713') / MD (TVD)
MP 7340' (7270') / MD (TVD)	

Casing Data:

Surface Casing: 13-3/8", 54.5#, K-55 Cem @ 1003'

Intermediate Casing: 8-5/8", 40#, N-80, 0 – 34'
36#, N80, 34' - 5680'
40#, N-80, 5680' - 7400'
8-5/8" Homco CSG Patch @ 2080' - 2120'
- *(7.5" ID, 5/21/1991)*

Inner Tie-back CSG: 7", 26#, Hydril 513, 0' - 7087' Cemented w 476 cf

Production Liner: 7", 26#, Hydril 513, Cem @ 7087' - 7650'
Gravel Packed Liner: 4-1/2", 11.6#, K-55, 7523' - 7845'
(*Gravel Packed w/82 CF 30-50 resin coated*)

Tubing Data:
249 x jts of 2-7/8 N80 EUE 8-rnd
2-7/8" Gas Lift Mandrel
1 x jts of 2-7/8 N80 EUE 8-rnd
2-7/8" Sliding Sleeve (2.313")
1 x jts of 2-7/8 N80 EUE 8-rnd
On/Off Tool w/ "XN" Profile (2.205" NoGo)
Halliburton "G6" Packer w/ Beveled Shoe

Wellhead:
9" 5M (2-9/16" Master)
11" x 9" Shaffer Tubing Head (T-AJO) / 2-7/8" EUE Hanger 5M
11" Casing Spool 5M
13-5/8" x 11" DSA 5M
13-5/8" SOW 5M

Perforations:
Gravel packed liner 7523' - 7845'
Completed in S1, S4, S8

Current Status:
Idle for inspection

Permit Status:
Pending

SoCal Gas Company

SoCalGas
A Sempra Energy utility

Well Operations Procedure

PROJECT NOTES

1. BOPE requirements in Gas Company Standard 224.05 shall be fully implemented at all times.
2. The storage reservoir pressures shall be monitored during the workover with a minimum of 300 psig overbalance for well control fluids.
3. Prepare the location by removing all relevant landscaping/lighting fixtures as well as surface piping and electrical components as needed. Locate rig anchors, reinstall if necessary.
4. DOGGR permit must be posted on site. Notify the DOGGR as required for BOPE testing prior to commencing downhole operations as stated on permit. DOGGR Ventura District office (805)-654-4761. If a permit has not been issued contact DOGGR 24 hours prior to rigging up on the well for verbal approval to rig up.

PRE-RIG WORK

1. De-energize and remove all laterals. Install companion flanges for circulating the well.
2. Complete slickline work as required to set-up well for circulation. – needs to be detailed depending on downhole configuration.
3. Ensure correlation log on file or plan for CCL.

WELLWORK PROGRAM

1. Move in production rig and rig pump with tank, shaker, and mixer.
2. Spot 500 bbl Baker tanks and load with 8.5 ppg KCl brine.
   - Connect pump to the tubing and vent the casing through the choke manifold to the SoCalGas withdrawal system.
   - Treat all brine with Biocide, 5 gals/100 bbls
3. Verify the well is dead. If needed, circulate well with 8.5 ppg KCL brine.
   i. The tubing volume is ~ 40 bbls and
   ii. The tubing/casing annulus is ~ 400 bbls.
   iii. *Use HEC polymer as required to minimize lost circulation.*
4. Install BPV in tubing hanger. ND tree.

   NOTE: Send-in wellhead and tree components for inspection.

5. +++Install Class III 5M BOPE per Gas Company Standard 224.05 and in accordance with the DOGGR permit. All connections and valves must be flanged and at least 5000 psig rated. (*Confirm BOPE rating*)

- All tests are to be charted and witnessed by a DOGGR representative.
- Perform a 300 psig low pressure test on the annular preventer, blind rams and pipe rams for 20 minutes. Test all lines and connections to 300 psig.
- Pressure test the Class III 5M annular preventer to 3500 psig for 20 minutes. Test blind rams and the pipe rams to 5000 psig for 20 minutes. Test all lines and connections to 5000 psig.
- Remove BPV.

6. POOH with production equipment. Lay down packer and production tubing.

   a.) Attempt to release packer. If not successful plan for a cut.
   b.) If planning to mill or fish, lay down production string and PU 2-7/8" P110 to be used as work string.

7. Pick up 2-7/8" P110 workstring and RIH with 7, 26# positive ID casing scraper to top of liner @ 7,523'. Circulate well clean. POOH.

8. RIH with stinger to PBMD @ 7,845' and clean out if necessary. POOH. If tagged fill, communicate the depth of fill to engineer.

9. MIRU WL unit to Run Gyro from PBMD to surface. Contact engineer for QC before RDMO WL. Send a copy of the survey file to elein@semprautilities.com.

10. Rig-up wireline unit(s) and run:

    a.) Magnetic flux leakage from top of production liner to surface
    b.) Multi-arm caliper log from top of production liner to surface

    Notify engineer prior to logging. Do not RDMO WL without engineer's approval.

11. RIH with RBP above liner top @ 7510', pressure test to 500 psi for 10 minutes and sand off.

12. Nipple down BOPE, crossover spool, and primary pack-off.

    a.) Send DSA and tubing spool to Vendor for refurbishment.
    b.) Install auxiliary spacer spool and NU BOPE

13. Rig-up wireline unit, install lubricator and run:

    c.) Ultrasonic from 7,510' to surface
    d.) CBL from 7,510' to surface

    Notify engineer prior to logging. Do not RDMO WL without engineer's approval.

14. Ensure equipment integrity (tree, spool, tubing hanger, master valve, wing valves) has been verified before proceeding to the next step.

15. ND BOPE, install tubing spool, reinstall BOPE and test.
    NOTE: VERIFY csg head rating before pressure test (5000 psi or 3000 psi; ensure we are not testing 3000 psi csg head to 5000 psi).

16. RIH with test packer(s) on work string and set @ 2000'. Conduct a Pressure Integrity Test ("Block"). Follow test schedule attached to this program. POOH with test packer and lay down.

    a.) Pressure test to 115% of the wells maximum allowable operating pressure (3625 psi) as per attached Pressure Test Schedule.
    b.) Engineering team to analyze log and pressure test results and recommend any additional remediation.

Test	Packer Depth	BP Depth	Test Pressure
1	2000'	7520'	3,625 PSI (Tubing /Casing Annulus above Packer)
2	2000'	7520'	2,825 PSI (Tubing and Casing below Packer)

17. RIH with retrieving tool on work string circulating while engaging RBP retrieval neck. Open bypass and allow RBP to equalize for 30 mins. Release RBP and allow elastomers to relax for 1 hr. Circulate as required to control well. POOH slowly to minimize swabbing and lay down work string.

18. If HEC was used to kill well consider pumping bleach treatment to break polymer. RIH with clean out string to PBMD @ 7,845' and spot bleach treatment. POOH.

19. RIH with new tubing as follows:

    RIH with packer assembly (items 1 - 9). RIH with XN plug, set and bundle test packer BHA to 4000psi for 5 mins. Pull XN plug. Continue running 3-1/2" tubing hydro-testing each connection to 4000psi.

    1. *~ 1ft - 3-1/2" 9.3# L80 TCPC Wireline re-entry guide, set at ~* ***7,460'***
    2. *~ 2ft - 3-1/2" 9.3# L80 TCPC XN Nipple (2.75" Bore w/ 2.635" NoGo)*
    3. *~ 10ft - Pup joint 3-1/2" 9.3# L80 TCPC*
    4. *~ 8ft - 3-1/2" 9.3# L80 TCPC x 7" 26# Mechanical Production Packer set at ~ 7,447'*
    5. *~ 10ft - Pup joint 3-1/2" 9.3# L80 TCPC*
    6. *~ 30ft – 1 Joint 3-1/2" 9.3# L80 TCPC tubing*
    7. *~ 2ft - Pup 3-1/2" 9.3# L80 TCPC*
    8. *~ 2ft - 3-1/2" 9.3# L80 TCPC (2.813" Open Down) sliding sleeve*
    9. *~ 4ft - Pup 3-1/2" 9.3# L80 TCPC*
    10. *~ 7349ft - 3-1/2" 9.3# L80 TCPC tubing to surface*

11. *Pup joints 3-1/2" 9.3# L80 TCPC for space-out*
12. *~ 10ft - Pup 3-1/2" 9.3# L80 TCPC*
13. *~ 4ft - 3-1/2" 9.3# L80 TCPC fatigue nipple (pin x pin)*
14. *Tubing hanger with 3-1/2" EUE top box / 3" BPV / 3-1/2" 9.3# TCPC bottom box*

Notes : Prior to sending completion equipment to well site

- Make up items 1) through 5) under the supervision of Quality Tubulars. Pressure test assembly to 4000 psi for 1hr, chart test. Test caps to be installed and removed by Quality Tubulars.
- Make up items 7) through 9) under the supervision of Quality Tubulars. Pressure test assembly to 4000 psi for 1hr, chart test. Test caps to be installed and removed by Quality Tubulars.
- Shift sliding sleeve and drift with XN plug prior to shipping tools to location.
- Seal lube top sub on ASX-1 packer, to be witnessed by Quality Tubulars.
- Packer vendor to provide Force Analysis / Tube Move Calculations prior to sending equipment to well site.

20. Land tubing as per vendor specifications.

    Note: Amount of compression to set on packer will be determined by Force Analysis / Tube Move Calculations.

21. Rig-up slickline unit and lubricator. Set a plug in the 2.75" XN profile.

22. Notifiy DOGGR to witness tubing tests to 3700 psi, hold for 1 hour. Perform annular test to 1000 psi, hold for 1 hour. Record tests digitally.

23. RIH with WL and recover XN plug. Shift the sliding sleeve open. RDMO WL.

24. Install BPV in tubing hanger. Nipple down BOPE, install production tree and test to 5,000 psig. Remove BPV.

25. RDMO.

UNLOAD WELL

26. Rig-up nitrogen unit. Recover workover fluid by pumping down annulus taking returns up tubing.

27. MIRU WL unit. RIH with slickline and shift sliding sleeve closed. POOH and rig down slickline unit.

WELL LATERAL HYDROTESTING

28. Per Gas Company Standard 182.0170, pressure test the tubing and casing kill laterals from the wellhead to the remote tie in to 3625 psig. Pressure test the tubing and casing withdrawal/injection laterals from wellhead to operating valves to 3625 psig.

21. Reinstall the hydro-tested laterals.

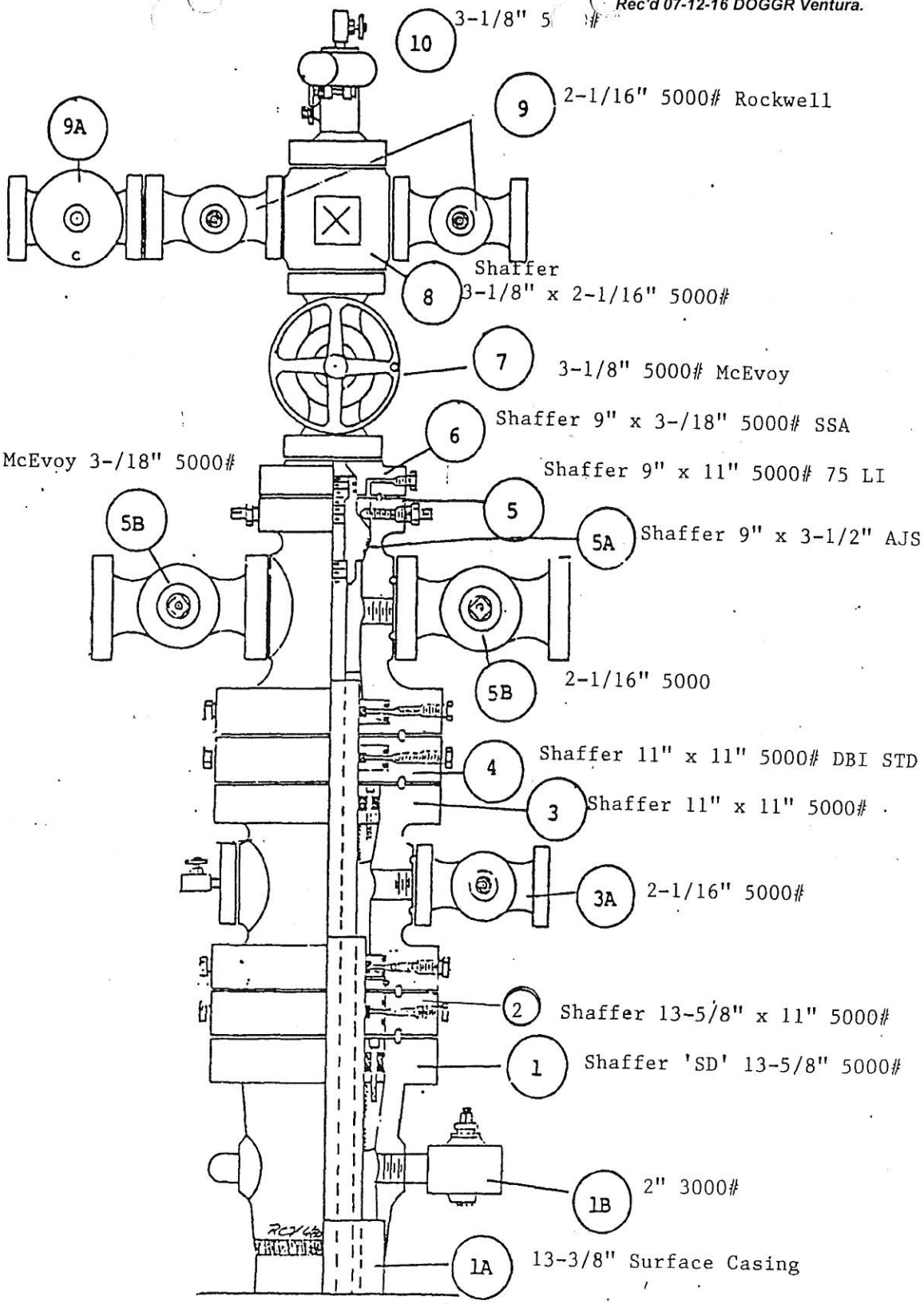
22. Install the well safety systems and instrumentation. Install pressure transmitters on tubing, casing, and surface casing.

23. Release well to operations.

EXTERNAL CORROSION PROTECTION

Per Gas Company Standard 167.30, remove any lead based paint and recoat wellhead, production tree, and laterals.

TYPE V



Well Name: Fernando Fee 34A

Mfgr: Shaffer

Date Prepared: 12-4-91

WELLHEAD DESCRIPTIO

Well No. Fernando Fee 34A

Field Aliso Canyon

Date Prepared 12/4/91

Wellhead Mfr. Shaffer

1. Casing Head Shaffer #360270 Size 13-5/8" 5000# Type "SD"

   Type _____ Slips & Pack-Off 12" x 8-5/8" "SD"

A. Surface Csg. Size 13-3/8" WT. N/A Grade N/A

B. Casing Head Valve _____ Size 2" 3000# Fig. No. _____

2. Seal Flange Shaffer #495634 Size 13-5/8" 5000# x 11" 5000

   Ring Type Bx 160 & Rx 54

A. Tubing Head _____ Size _____

   Ring Type BOttom _____ Top _____ Outlets _____

   Sec. Seal _____ Valve. Removal Threads _____

3. Inner String Landing Spool Shaffer #360552 Size 11" 5000# x 11" 5000#

   Ring Type Rx-54 Sec.Seal 8-5/8" PS Outlets 2-1/16" 5000 Studded Removal Thrd. _____

   Spool Valve McEvoy Size 2-1/16" 5000 _____ Fig. No. _____

4. Seal Flange Shaffer #496060 Seal 11" 5000# x 11" 5000 DO B/O Studded

   Type Seal 6-5/8" PS Ring Type Rx - 54

5. Tubing Head Shaffer #420698 Size 9" 5000# x 11" 5000 Type Seal 75 L1

   Outlets 3-1/8" 5000 Sec.Seal 6-5/8" PS Valve Thrd. _____

   Ring Type Bottom Rx - 54 Top Rx - 50 Outlets _____

A. Tubing Hanger Shaffer Size 9" x 3-1/2"

   Bore _____ Type AJS Threads _____

   B.P.V. Size and Thread Shaffer 3-1/2"

B. Tubing Head Valves McEvoy Size 3-1/8" 5000

   Fig. No. _____

C. Automatic Csg. Valve _____ Size _____

   Fig. No. _____

WELLHEAD DESCRIPTION

6. Adapter Seal Flange 9" 5000 x 3-1/8" 5000
   Size 9" 5000 x 3-1/8" 5000 SSA Bore 3-1/8" Ring Size 50 & 35
7. Master Valve 3-1/8" McEvoy Size 3-1/8" Fig No.
8. Xmas Tree Cross Shaffer Size 3-1/8" 5000 x 2-1/16" 5000 Thru Bore 3-1/8"
   Across
9. Tubing Wing Valves Rockwell Size 2-1/16" 5000
   Fig. No. A. Auto. Tbg. Prod. Valve
   Size Fig. No.
10. Unibolt Size 3-1/8" 5000 Inside Thrds. No
11. Tubing Head to Ground Level 2'
12. Casing Size 8-5/8" 36 & 40# WT Wt. Landed
13. Inner Casing Size 6-5/8" 24# Wt. 141,000#
    Type N-80 ABFL4S Wt. Landed 15,000#
14. Tubing Size 2-7/8" Type Thrd. 8RD
    Type 6.5# N-80 Wt. Landed on Doughnut 40,000#
    Depth 7434'

DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

CHECK LIST-RECORDS RECEIVED AND WELL STATUS

OPERATOR **Southern Calif. Gas Co.** WELL DESIGNATION: **"Fernando Fee" 34-A**

API No. **03722044** SEC **34** , T. **3N** , R. **16W** , **SB** B. and M.

COUNTY: **Los Angeles** FIELD **Aliso Canyon**

Type of Notice: **Supplementary** **Date:** **1/20/2009** **Report Number:** **P209-25**

RECORDS RECEIVED (ATTACH PAGES IF REQUIRED)

	Date	OK	NEED	Remarks
Well Summary (OG100)	5/7/04			
History (OG103)				
E-Log				
Mud Log				
Dipmeter				
Directional				
Core and/or SWS				

NEW STATUS

DATE: _____

NOTICE OF RECORDS DUE

DATE: _____

DATE: _____

DATE: _____

DATE: _____

WELL STATUS INQUIRY

DATE: _____

DATE: _____

Well Stat.

Change Required: NO

Change Done: _____

ABANDONMENTS/REABANDONMENTS/DRILLS/REDRILLS

ABANDONMENT DATABASE : _____ SURFACE INSPECTION NEEDED _____ COMPLETED _____ *Date and Inspector*

FINAL LETTER NEEDED _____ COMPLETED ✓ _____ *(Date)* DRILL/REDRILL DATABASE ✓

ENGINEER'S CHECK LIST

T-REPORT(S) ✓ OPERATOR'S NAME ✓ WELL DESIGNATION ✓ SIGNATURE ✓

LOCATION ✓ ELEVATION: ✓ CONFIDENTIAL RELEASE DATE: _____ PERMIT REQUIREMENTS MET _____

CLERICAL CHECK LIST

LOCATION CHANGE (OG165) _____ ELEVATION CHANGE (OG165) _____ RELEASE OF BOND (OG150) _____

REMARKS

RECORDS SCANNED: 6/10/04 *(Date)*

RECORDS APPROVED: 6/10/04 SMF *(Date and Engineer)*

Modified OGD2

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company
Well: Fernando Fee 34 A
A.P.I. No. 03722044

MAY - 7 2009

Field: Aliso Canyon
Surface Location: Sec 34 3N 16W S.B.B.M.
Title:

County: Los Angeles

Date: 5/7/2009

Signature: (President, Secretary, or Agent)
(Person Submitting Report)

Address: PO Box 2300, SC9365, Chatsworth, CA, 91313-2300

Telephone Number:

History must be complete in all detail. Use this form to report all operations during drilling and testing of the well or during redrilling or altering the casing, plugging, or abandonment, with the dates thereof. Include such items as hole size, formation test details, amounts of cement used, top and bottom of plugs, perforation details, sidetracked junk, bailing tests, and initial production data.

Start Date	Ops. DOGGR Rpt
1/5/2009	Rigged up to kill well. Open well 650 psi tubing 350 psi casing. Pumped 7 bbls of 10 ppg clay base mud, water returns to surface, pumped total 256 bbls mud with returns to surface. Shut in 6-5/8" annulus and opened 8-5/8" annulus. Pumped 90 bbls with mud returns to surface.
1/6/2009	Filled well with 6 bbls. Pressure test 8-5/8" annulus to 200 psi for twenty minutes.
1/7/2009	Tested blind rams to 5000 psi for twenty minutes. Removed back pressure plug, made up 2-7/8" tubing sub. Tested pipe to 5000 psi for twenty minutes, tested Hydril to 3500 psi for twenty minutes. Tested choke manifold and all control valves to 5000 psi for twenty minutes. (W. Biel CADOGGR witness and approved test) Rigged out tester. Rigged up KT&W wire line. Made up pulling tool ran in well to 7378', could not get over prong.
1/8/2009	Rigged up wire line, ran in well with bailer, bailed down to prong. Ran in well with pulling tool latched prong, jarred on prong (could not pull prong.) Rigged out slick line. Backed out hold down studs, unlanded tubing, and attempted to release from packer at 7433'.
1/9/2009	Rigged up Western wire line braided line. Made up pulling tool, ran in well, latched prong, jarred on prong, sheared off. Reran pulling tool, jarred and pulled prong. Made up bailer and bailed down to plug body. Made up GS pulling tool, ran in well, latched plug body, jarred on body, sheared off. Re pinned tool ran in well, jarred on plug body. Pulled out of rope socket. Secured well.
1/12/2009	Rigged up Western wire line, made up fishing tools, ran in well, latched on fish. Pulled out of well and laid down tools. Rigged up to chemical cut tubing. Made up 2-1/8" chemical cutter, ran in well to 7392', attempted to cut tubing and pulled out of well, tubing did not cut. Worked tubing. made up CCL, ran in well, showed tubing cut.
1/13/2009	Made up free point tool and ran in well to 4000', pipe free. Ran in well to 5500', pipe free. Ran in well to 6000', pipe free. Ran in well and tagged plug at 7398' set tool, pipe 40% free. Picked up to 7383', pipe free. Pulled out of well, made up chemical cutter, ran in well to 7386', attempted to cut tubing, tubing did not part. Worked tubing and parted it. Rigged down wire line. Pulled out of well and laid down production equipment. Made up (2) joints 5-1/2" wash pipe and jars and ran in well to 3200' kill string.
1/14/2009	Ran in well to 7372' tagged, worked down to top of fish at 7386'. Picked up power swivel and attempted to work over fish. Made 1', circulated well clean, pulled out of well to kill string at 3500'
1/15/2009	Pulled out of well, and found shoe rolled in. Made up mill shoe, (2) joints 5-1/2" wash pipe and jars. Ran in well to 3500'.
1/16/2009	Ran in well to 7382', picked up power swivel, cleaned out fill to 7397'. Laid down power swivel and pulled to 7376'.
1/20/2009	Ran in well to top of fish at 7385', worked over fish. Jarred on fish, came free and lost circulation. Filled well with 25 bbls. Circulated out gas cut mud with 200 bbls. Pulled out of well, laid down fishing tool and fish. Recovered 12', 2-7/8" stub, no-go nipple 1 joint 2-7/8" tubing and seal assembly) Ran in well to 3100' kill string.
1/21/2009	Ran in to top of fish at 7385', cleaned out to packer at 7430'. Circulated well clean. Pulled out of well, laid down wash pipe, and shoe. Picked up 5-3/4" overshot with 10' extensions, jars, (4) 4" drill collars and intensifer. Ran in well to 2500'.
1/22/2009	Pulled out of well with kill string. Measured and picked up 16 joints 2-3/8" tubing ran in well to 7542' tagged, plugged off work string, attempted to unplug. Pulled out of well to kill string at 3100'.
1/23/2009	Pulled out of well, made up reverse saw tooth shoe, ran in well to 7542' rotate in liner. Ran in well to 7771' attempted to clean out fill, would not circulate. Pulled out of to 7430'.
1/26/2009	Ran in well to 7771', (S. Fields DOGGR approved tag and cementing) Rigged up BJ cementers. With open ended tubing at 7771' pumped 5 bbls water ahead mixed and pumped 8 bbls class "G" cement with R-3, CD32, FL-6L, ASA-301 and displaced with 42 bbls mud, no returns to surface during cementing. CIP 11:00 am. Pulled out of well to 3400', reversed circulated 40 bbls. Ran in well to 7330'.
1/27/2009	Open well 0 psi 5 bbls to fill. Ran in well tagged top of cement at 7495'. Pulled out of well laying down 2-7/8" tubing. Laid down (223) joints 2-7/8" tubing and (16) joint 2-3/8" tubing. Laid down (4) 4" drill collars. Set out rotary table nipple down flowline.

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company
Well: Fernando Fee 34 A
A.P.I. No. 03722044

MAY - 7 2009

Field: Aliso Canyon County: Los Angeles
Surface Location: Sec 34 3N 16W S.B.B.M.
Title:
(President, Secretary, or Agent)

Date: 5/7/2009

Signature:
(Person Submitting Report)

Address: PO Box 2300, SC9365, Chatsworth, CA, 91313-2300 Telephone Number:

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Start Date	Ops. DOGGR Rpt
1/28/2009	open well 0 psi fill well with 2 bbls. Nipped down class III BOP. Removed snap rings and seal unit. Made up spear on 3-1/2" drill pipe speared 6-5/8" casing unlanded casing at 180,000# removed slips. Stacked out and released spear. Nipped up class III BOP (Changed pipe rams to 6-5/8"). Picked up spear speared casing worked casing at 240,000# pulled free. Rigged up WEA casing tongs pulled out of well laying down 6-5/8" casing.
1/29/2009	Open well 0 psi fill well with 2 bbls. Pulled out of well laying down 6-5/8" casing (Casing plugged pulling wet) Laid down 148 joints.
1/30/2009	Open well 0 psi 5 bbls to fill. Pulled out of well laying down 6-5/8" casing (Found hole in 4th joint from bottom across from sliding sleeve) Laid down 186 joints and seal assembly. Picked up kelly and swivel. Rigged up to run 3-1/2" drill pipe. Measured and picked up (20) joints hevi-wate drill pipe. Measured and picked up 3-1/2" drill pipe to kill string at1700'.
2/2/2009	Open well 0 psi 7 bbls to fill. Pulled out of well with kill string. Measured and picked up 7-3/8" swedge,bumper sub, (4) 4-3/4" drill collars. Ran in well to 2000' Measured and picked up 3-1/2" tubing (clear thru patch area) Ran in well to 6000'.
2/3/2009	Open well 0 psi 0 bbls to fill. Meeasured and picked up 3-1/2" drill pipe tagged at 7490'. Pulled out of well laid down Swedge. Made up 7"section mill. Ran in well to 3000'.
2/4/2009	Open well 0 psi 0 bbls to fill. Ran in well with section mill to 7400' Opened tool started cutting section at 7400'. (Generater broke down)
2/5/2009	Open well 0 psi 0 bbls to fill. Open tool started milling window from 7400'. Milled window from 7400' to 7420'. Pumped sawdust sweep and circulated well clean. Pulled to 7371'
2/6/2009	Open well 0 psi 0 bbls to fill. Ran in well to 7420 open tool mill 8-5/8" casing from 7420' to 7440'. Circiulated well clean and pulled to shoe at 7371'
2/9/2009	24 hr. operations. Open well 0 psi 0 bbls. to fill. Ran in well to 7400' opened tool reamed to 7440' . Milled 8-5/8" casing from 7440' to 7458' (tool fell thru blades wore out) Circulated well clean pulled out of well laid down section mill. Made up section mill #2 ran in well to 4000'. Shut down due to high winds at 4:30 a.m.
2/10/2009	24 hr. operations . Ran in well to 7400' opened tool reamed to 7458'. Milled 8-5/8" casing from 7458' to 7470'. Circulated well clean (pumped sweeps) pulling out of well at report time
2/11/2009	24 hr. operations. Pulled out of well laid down section mill. Made up 6"X12" underreamer ran in well to 7400' opened tool cut shoulder. Open hole to 12" from 7400' to 7480'. Circulated well clean pulled out of well laid down underreamer. Ran in well open ended to 7470' cleaned out fill to 7490'. Circulating well at report time.
2/12/2009	24 hr operations. Circulated well clean. Rigged up BJ cementers with tail at 7485' Pumped 5 bbls water ahead mixed and pumped 208 cu. ft. class "G" cement with R-3, CD-32, FP-6L and ASA-301 pumped 2 bbls water spacer and displaced with 46 bbls. Ran in well tagged cement at 7082' .
2/13/2009	24 hr operations. Pulled out of well made up 7-3/8" bit (4) 4-3/4" drill collars rna in well to top of cement at 7082' Cleaned out cement to 7404' circulated well clean at report time.
2/14/2009	24 hr operations. Circulated well clean pulled out of well laid down bit and bit sub.made up HC 6-3/4" bit mud motor, stabilizer DWD tool, non-mag flex drill collar,(4) 4-3/4" drill collar and 20 joints hevi-wate drill pipe. Tested tools Ran in well to 7404'. Timed drill to 7415' at report time.
2/15/2009	24 hr operations. Directionally drilled 6-3/4" hole from 7415' to 7650' circulating well for underreamers at report time.
2/16/2009	24 hr operations. Circulated well clean pulled out of well. Laid down HES directional tools Made up under reamer #1 ran in well to 7400'. Opened tool and cut out under reamed 6-3/4" hole to 10" from 7400' to 7494' at report time.
2/17/2009	24 hr operations. Under reamer 6-3/4" hole to 10" to 7497' circulated well clean pulled out of well. Made up under reamer # 2 ran in well to 7400' gauged hole to 7497'. Under reamed 6-3/4" hole to 10 from 7497' to 7565' at report time.
2/18/2009	24 hr operations. Opened hole to 7582' circulated well clean. Pulled out of well changed out under reamers. Ran in well to 7497' reamed to 7582' under reamed 6-3/4" hole to 10" from 7582' to 7640' at report time

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company
Well: Fernando Fee 34 A
A.P.I. No. 03722044

MAY - 7 2009

Field: Aliso Canyon
Surface Location: Sec 34 3N 16W S.B.B.M.
Title:

County: Los Angeles

(President, Secretary, or Agent)

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Start Date	Ops. DOGGR Rpt
2/19/2009	24 hr operations. Under reamed to 7650' Circulated well clean for 7" casing. Pulled out of well laid down under reamer. Rigged up casing tongs Meased and picked up float shoe (1) float collar 13 joints 7" 513 Hydril casing. (Cementer adapter wrong size.) laid dwn 14 joints casing. Made up 7-3/8" bit ran in well to 7650 (No fill) Circulating well for casing at report time.
2/20/2009	24 hr operations. Pulled out of well laid down bit . Made up shoe joint with float collar. Measured and picked up 13 joints 7" 513 Hydril casing . Made up cementer adapter ran in well to 7650' Rigged up BJ cementers circulated well. Held safety meeting pumped 10 bbls water ahead 30 bbls. ultra flush II mud flush and 10 bbls. water. Mixed and pumped 192 cu.ft. class "G" cement with 10% BA-90. .03% R-3 ,.07% CD-32,.05% FL-52 .25% sodium metasilicate and 30% silca flour. Dropped dart displaced 50 bbls mud picked up plug . Displaced with 20 bbls mud bumped plug at 1500 psi bleed back with no returns. Pulled to 6800' rigged up and reversed circulated with 50 bbls 5 bbls cement returns to surface. Reversed 100 bbls pulled to 5000'. (CIP @ 9:00 pm)
2/23/2009	Open well 0 psi 0 bbls to fill. Pulled out of well laid down running tool. Made up 7-3/8" bit (4) 4-3/4" drill collars ran in well to 6773' tagged cement. Cleaned out cement to 6900' circulated well clean. Secured well.
2/24/2009	Open well 0 psi 0 bbls to fill. Cleaned out cement to 7083' (top of 7" casing) circulated wll clean. Pulled out of well to 3000'. Secured well.
2/25/2009	Open well 0 psi 0 bbls. to fill. Pulled out fo well laid down 7-3/8" bit. Made up 6-1/8" bit ran in well to 7083' (top of 7" casing) Cleaned out cement to 7993' ran in well to 7600' Circulated well clean pulled out of well to 2000'. Secured well.
2/26/2009	Open well 0 psi 0 bbls to fill. Pulled out of well laid down bit. Made up 5-1/2"X 8" under reamer ran in well to 6750'. Scraped casing with under reamer to 7083'. Circulated well clean for 7" casing. Pulled out of well to 4000'. Secured well.
2/27/2009	Open well 0 psi 0 bbls to fill well. Pulled out of well layed down under reamer. Changed pipe rams rigged up casing tongs. Measured and picked up shoe track measured and picked up 7" 26# casing to 3500'. Secured well.
3/2/2009	Open well 0 psi 0 bbls to fill. Measured aand picked up 7" 26# Hydrill 513 casing tagged stub at 7087' with 179 joints rigged out casing equipment. Secured well. Slipped and cut drilling line.
3/3/2009	Open well 0 psi 0 bbls to fill. Circulated well 1250 psi at 3.5 bpm. Rigged up BJ cementers held safety meeting. Pumped 20 bbls water and 30 bbls ultra II flush ahead. Mixed and pump 84 bbls. (476 cu. ft) class "G" cement with CD-32, FL-52, FP-6L, SS-2 and R-3 displaced with 271 bbls mud (did not bump plug). Bleed back float held. Rigged out cementers. Rigged up B&L lift kit. Nipple down BOP lifted BOP set slips landed 7" casing. Rigged out lift kit. Nippled down BOP cut off 7" casing. Nippled up tubing head. Set in BOP nippled up BOP. Secured well.
3/4/2009	Open well 0 psi 0 bbls to fill. Tested tubing head and seal flange to 5000 psi for twenty minutes. (All test good) Nippled up class III BOP install pitcher nipple and flowline. Set in rotary table. Changed pipe rams to 3-1/2". Made up 6-1/8 bit (4) 4-3/4" drill collars. Ran in well to 5000'. Secured well.
3/5/2009	Crew safety meeting. Replaced brake bands. Ran in well tagged cement at 6937' drilled out cement to 7017'. Circulated well clean
3/6/2009	Open well 0 psi 0 bbls. to fill. Clean out cement to float at 7087'. Drilled out float and shoe ran in well to float collar at 7611' Tested 7" casing to 1000 psi for twenty minutes. (Tested good) driiled out float and cement to 7640' circulated well clean. Secured well.
3/9/2009	24 hr operations.Open well 0 psi 0 bbls. to fill. Ran in well to 7640' drill out cement and shoe to 7660'. Rigged up and changed over well to XC polymer mud and cleaned mud pits. Pulled out of well made up 6-1/8" bit, near bit stabilizer , 4-3/4" drill collar, string stabilizer, (3) 4-3/4" drill collars. Running in well at report time.
3/10/2009	24 hr operations. Ran in well to 7086' (casing transition) Attempt to clean up could not slide thru) Pulled out of well laid down bit and near bit stabilizer made up (2) string mills ran in well to 7086'. Milled thru transition area until clean. Pulled out of well laid down mills. Made up 6-1/8" bit near bit stabilizer, 4-3/4" drill collar string stabilizer (3) 4-3/4" drill collars. Running in well at report time.
3/11/2009	24 hr. operations. Run in well to 7660' Drilled 6-1/8 hole from 7660' to 7850' circulated well clean pulled out of well laid down bit and stabilizers. Made up 5-3/4"X 8" under reamer running in well at report time

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company
Well: Fernando Fee 34 A
A.P.I. No. 03722044

Field: Aliso Canyon
Surface Location: Sec 34 3N 16W S.B.B.M.

County: Los Angeles

MAY - 7 2009

Title:
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Start Date	Ops. DOGGR Rpt
3/12/2009	24 hr operations. Ran in well with under reamer to 7651'. Opened tool cut window under reamed 6-1/8" hole to 8" from 7651' to 7775'. Circulated well clean pulled out of well laid down under reamer (one cone loose and one cone locked up). Made up under reamer # 2 ran in well to 7750' reamed to 7775'.
3/13/2009	24 hr. operations. Under reamed 6-1/8" hole to 8" from 7775' to 7850'. Circulated well clean pulled out of welll Laid down under reamer made up 6" X 10" under reamer. Ran in well to 7651' opened tool under reamed 8" hole to 10" from 7651 to 7750' at report time.
3/14/2009	24 hr. operations Under reamer 8" hole to 10 to 7787 circulated well pulled out of well laid down under reamer (one cone missing). Made up 10" under reamer # 2 started in well (Would not go past 70' (Caliper tool more than drift) Laid down and picked up 6 " X 12" under reamer ran in well to 7652". Open tool under reamed 10" hole to 12" from 7652' to 7787' circulated well started out of well attempting to working into shoe at report time.
3/15/2009	24 hr operations. Attempt to work tool into shoe. Ran in well to 7779' Reamed and attempt to wear out arms (pull to shoe everytwo hours) Reamed to 7853'. Rigging up Tiger wire line at report tine
3/16/2009	24 hr operations. Rigged up Tiger wire line made up 1-3/4" severing tool. Ran in well to 7845' severed at bit sub. Pulled out of well with wire line. Pulled out of well to 7000' (dragging 10,000 over string weight.) Rigged out wire line pulled out of well. Laid down damaged drill collar. Made up 6" X 10 under reamer ran in well to 7845' tagged junk. Pulled out of well to 7750' open tool reamed to shoulder at 7790'. Under ream hole to 7845' circulated well clean pulled out of well. laid down 10" under reamer made up 6"X12" under reamer running in well at report time.
3/17/2009	24 hr. operations. Ran in well to 7651' open tool reamed to 7845'. Pulled to 7651' slid to 7845' Circulated well for caliper loggs. Pulled out of well laid down under reamer. Rigged up WEA wire line.Ran in well with 2 arm caliper tool from 7845' to 7650'. (logged showed hole under gauged) Rigged down wire line Made up 12" X 6" under reamer running in well at report time.
3/18/2009	24 hr. operations. Ran in well with 12" under reamer to 7651' Gauged hole to 12" from 7551' to to 7845' circulated well for logs. Pulled out of well laid down under reamer (arms loose cams broken) Nippled up shooting flange. Rigged up Schlumberger wire line. Ran in well with 4 arm caliper log. Logged from 7845' to 7650' (Showed hole under gauged at 10") Rigged down loggers nippled up pitcher nipple and flow line, Made up 12" under reamer running in well at report time.
3/19/2009	24 hr. operations . Ran in well with under reamer to 7651' open tool reamed down to 7676' underream hole to 7761' circulated well clean. Pulled out of well laid down under reamer. Made up 12" under reamer ran in well to 7761. Under reaming at report time.
3/20/2009	24 hr operations. Under reamed hole to 7845' Circulated well clean. Rigged up and pumped 50 bbls. Hi- vis polymer pill displaced to 7460'.Pulled to 7470 changed over well to filtered 3 % KCL water. Cleaned pits. Pulled out of well laid down tools. Rigged up and ran Circulating shoe, (4) joints .008 wire wraped screen with 6" shroud, (2) joints 4-1/2" semi slotted liner, (1) joint 4-1/2" blank liner and gravel tools.Ran in well tagged at 7844'. Rigged up and set packer tested annulus and release tools at 1500 psi for 20 minutes. Rigged up to gravel pack at report time.
3/21/2009	24 hr operations. Stabbed in circulating shoe broke circulation pulled to gravel position circulatng at 200 psi started gravel. Packed off at 600 psi with 84 cu. ft in place (126 caculated) Reversed out 2 cu. ft. wait one hour re-stressed pack at 600 psi. Released from tools. Pulled out of well laid down gravel pack tools. Ran in well with tubing tail to 7820'. Mixed and spotted 34 bbls. MI breaker displaced with 55 bbls KCL water. Pulled out of well laid down tubing tail made up HES G-6 packer 6' 2-7/8" pup joint, On/Off tool with PXN plug in place. Ran in well to 7483' set packer released from O/O tool tested annulus to 1000 psi for twenty minutes. Secured well.
3/26/2009	Open well 0 psi 0 bbls to fill. Pulled out of well laid down amd loaded out 242 joint 3-1/2" drill pipe.
3/27/2009	Open well 0 psi 0 bbls to fill. Laid down (4) 4-3/4" drill collars. Laid down kelly and swivel rigged out drill pipe equipment. Changed pipe rams to 2-7/8". Rigged up tubing equipment measured and picked up On/Off tool (1) joint 2-7/8" tubing, SSD sliding sleeve -closed ,(1) joint 2-7/8" tubing, GLMA gas lift mandrel with 1.0 dummy valve. Measured and picked up 2-7/8" tubing to 6075'.

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

HISTORY OF OIL OR GAS WELL

Operator: Southern California Gas Company
Well: Fernando Fee 34 A
A.P.I. No. 03722044

Field: Aliso Canyon County: Los Angeles
Surface Location: Sec 34 3N 16W S.B.B.M.
Title:

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History must be complete in all detail. Use this form to report all operations during drilling and testing of the well or during redrilling or altering the casing, plugging, or abandonment, with the dates thereof. Include such items as hole size, formation test details, amounts of cement used, top and bottom of plugs, perforation details, sidetracked junk, bailing tests, and initial production data.

Start Date	Ops. DOGGR Rpt
3/30/2009	Open well 0 psi 0 bbls. to fill. Measured and picked up 2-7/8" tubing to 7780'. Circulated well with 250 clean KCL. Latched on/off tool spaced well landed in tubing hanger with 9000# compression tested annulus to 1000 psi for twenty minutes. Rigged up K T &W slick line. Ran in well and shifted sliding sleeve open rigged out wire line. Nippled down class III BOP. Nippled up production tree.
3/31/2009	Rigged down hoist and load out equipment.

MAY - 7 2009

NATURAL RESOURCES AGENCY
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS AND GEOTHERMAL RESOURCES

No. P **209-25**

PERMIT TO CONDUCT WELL OPERATIONS

010	010
(Old) Field Code	(New)
00	00
(Old) Area Code	(New)
30	30
(Old) Pool Code	(New)

Gas Storage
Supplementary Notice

James D. Mansdorfer, Agent
Southern California Gas Company
9400 Oakdale Ave.
Chatsworth CA 91313

Ventura, California
February 23, 2009

Your proposal to **rework** well **"Fernando Fee" 34-A**, A.P.I. No. **037-22044**, Section **34**, T. **3N**, R. **16W**, **S.B.** B. & M., **Aliso Canyon** Field, **Sesnon-Frew** Pool, **Los Angeles,** County, dated **01/20/09**, received **01/20/09** has been examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED:

1. In all other respects, the operations are to be conducted in accordance with provisions outlined in Permit P208-427, dated December 17, 2008.

Engineer: Steve Fields

Phone: (805) 654-4761

Hal Bopp
State Oil and Gas Supervisor

By _____
Bruce Hesson, Deputy Supervisor

A copy of this permit and the proposal must be posted at the well site prior to commencing operations. Records for work done under this permit are due within 60 days after the work is completed or the operations have been suspended. Issuance of this permit does not preclude the recipient from the obligation of being in compliance with all applicable Federal, State and Local laws, regulations and ordinances.

OG 111

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

1000,000
111 ✓
114 ✓
115 ✓
121 ✓
P209-25

SUPPLEMENTARY NOTICE

Detailed instructions can be found at: www.conservation.ca.gov/dog/

A notice to the Division of Oil, Gas, and Geothermal Resources, dated 12/12/2008, stating the intention to

Rework (Drill, Rework, Abandon) well Fernando Fee 34A, API No. 037-22044,

Sec. 34, T. 3N, R. 16W, S.B. B.&M., Aliso Canyon Field, Los Angeles County

should be amended because of changed conditions.

The complete casing record of the well (present hole), including plugs and perforations, is as follows: (Attach wellbore schematics diagram also.)

GS

13-3/8",	54.5 lb/ft,	K55,	0'- 1003'	(cmtd)
8-5/8",	36, 40 lb/ft,	N80,	0'- 7652'	(cmtd)
6-5/8",	24 lb/ft,	N80,	0' - 7500'	(landed on Baker Retrieva D packer)
5-1/2",	20 lb/ft,	K55,	7554' – 7848'	Wire-wrapped screen, gravel packed in 15" hole with 20-40 gravel

The 8-5/8" casing is perforated with four ½" holes at 7570'. WSO in 8-5/8" at 7272'. Homco casing patch in 8-5/8" (2080' – 2120')

The total depth is: 7855 feet. The effective depth is: 7855 feet.

Present completion zone(s): Sesnon (Name). Anticipated completion zone(s): Sesnon (Name).

Present zone pressure: Variable psi. Anticipated/existing new zone pressure: Variable psi.

We now propose: (A complete program is preferred and may be attached.)

Due to the Homco patch in 8-5/8" (2080' - 2120') , we propose to kick-off by section milling the casing rather than set a whipstock in the casing as originally proposed. Please see attached complete program.

JAN 20 2009

If well is to be redrilled or deepened, show proposed coordinates (from surface location) and true vertical depth at total depth: 500 feet North (Direction) and 330 feet West (Direction) Estimated true vertical depth: 7760'

Will the Field and/or Area change? Yes☐ No☒ If yes, specify New Field: New Area:

The Division must be notified immediately of changes to the proposed operations. Failure to provide a true and accurate representation of the well and proposed operations may cause rescission of the permit.

Name of Operator: Southern California Gas Company			
Address: 9400 Oakdale Ave		City/State: Chatsworth	Zip Code: 91313
Name of Person Filing Notice: Dan Neville	Telephone Number: 818-700-3810	Signature	Date: 01/20/2009
Individual to contact for technical questions: Dan Neville	Telephone Number: 818-700-3810	E-Mail Address: dneville@semprautilities.com	

This notice must be filed, and approval given, before the operations begin. If operations have not commenced within one year of the Division's receipt of the notice, this notice will be considered cancelled.

OG123 (10/08)

CRITICAL WELL DEFINITION

As defined in the California Code of Regulations, Title 14, Section 1720 (a), "Critical well" means a well within:

(1) 300 feet of the following:
  (A) Any building intended for human occupancy that is not necessary to the operation of the well; or
  (B) Any airport runway.
(2) 100 feet of the following:
  (A) Any dedicated public street, highway or the nearest rail of an operating railway that is in general use;
  (B) Any navigable body of water or watercourse perennially covered by water;
  (C) Any public recreational facility such as a golf course, amusement park, picnic ground, campground or any other area of periodic high-density population; or
  (D) Any officially recognized wildlife preserve.

WELL OPERATIONS REQUIRING BONDING

1. Drilling, redrilling, or deepening any well.
2. Milling out or removing a casing or liner.
3. Running and cementing casing or tubing.
4. Running and cementing liners and inner liners.
5. Perforating casing in a previously unperforated interval for production, injection, testing, observation, or cementing purposes.
6. Drilling out any type of permanent plug.
7. Reentering an abandoned well having no bond.

This form may be printed from the DOGGR website at **www.conservation.ca.gov/dog/**

JAN 20 2009

WORKOVER PROGRAM

Operator: **Southern California Gas Company**

Field: **Aliso Canyon Storage Field**

Well: **Fernando Fee 34A**

Date: **December 22, 2008** **(Rev 1/15/09)**

API: **037-22044**

Objective: **Abandon existing storage zone completion. Kick-off and redrill through storage zone. Gravel pack and recomplete.**

Present Conditions:

Surface casing:
13-3/8", 54.5 lb/ft, K55, Buttress
0' - 1003'

Production casing:
8-5/8", 40 lb/ft, N80 0' – 34'
8-5/8", 36 lb/ft, N80 34' – 5636'
8-5/8", 40 lb/ft, N80 5636' - 7652'

Tubing
2-7/8", 6.5 lb/ft, N80, EUE 8rd
0' – 7434'

Well Kill:

Well kill procedure will use fluids which will provide 300 – 500 psi minimum overbalance at the top of the storage zone (S4). Remove instrumentation. Remove laterals and install companion flanges and valves for killing well.

1) Set two 500 barrel closed top tanks and fill with approximately 800 bbls 10.0 ppg drilling mud. Move in pump with 100 bbl circulating tank, shaker and mixer.

2) Dead head 80 barrels of mud down tubing to provide required overbalance. Check wellhead pressure prior to pumping and calculate gradient using TVD=7580'. Wellhead pressure on 12/22/08 was 2790 psi. A 10.0 ppg workover fluid provides an overbalance of 622 psi.

3) Kill well per schedule: Maintain constant bottomhole pressure overbalance throughout kill. Vent gas through choke to withdrawal line. Bleed pressure from casing annulus. If unable to bleep, pump drilling mud down annulus to kill shallow zone pressure. Check pressure daily during workover.

Rig work:

1) Move in heavy work over rig capable of 300,000 lbs. Rig up with sub-base and rotary table. (3-1/2" drill pipe and handling equipment will be used.)

2) Set 2-7/8" LH Shaffer BPV. Remove Xmas tree and send to yard for refurbishment.

3) Install Class III B BOPE directly on 10' X 8"-5000psi flange. Fit BOPE with 2-7/8" pipe rams and CSO. BOPE must have connection and valve below the blind rams. Test BOPE system per SoCalGas job instruction. Test to 5000psi. Notify DOGGR to witness testing.

4) Install pup jt of 2-7/8" N-80 tubing in tubing hanger with safety valve in top. Unland and work ¼" turn RH torque in tubing to get rotation at packer. Un-jay seal assembly and pull tubing. Pull and lay down tubing accessories.

5) If seals/latch cannot be released, chemically cut tubing above the Otis BWB packer in first full joint of tubing at approximately 7415' and pull and lay down all tubing and accessories. Pick up wash pipe and wash over tubing stub to top of packer. Pick up overshot, jars, and bumper sub and retrieve seal assembly.

6) Run in with 1-1/2" Hydril tubing through Otis BWB packer and clean out to TD of 7848'. Lay a balanced cement plug from 7848' to 7520'. Pull up and wait on cement. The DOGGR shall witness cementing operations and the tag at 7520'. Pull out of well and lay down tubing.

7) Remove tubing head and seal flange. Send to yard for conversion to 7" casing. (Seal flange and tubing head to be drilled out to accommodate 7" casing)

8) Pick up casing spear and unland 6-5/8" casing. Pull out of well and lay down casing.

9) Pick up 3-1/2" drill pipe. Run in with swedge for Homco casing patch at 2080'. Swedge patch to ensure that future work through the patch will not cause patch to fail.

10) Run in with section mill to 7300'. Section mill 8-5/8" casing from 7300' – 7350' achieveing a minimum length of 50'. (Continue section milling past 7350' as long as mill is in good condition).

11) Run in with hole opener and open hole to 12" from 7300' – 7350'.

12) Pick up 2-7/8" tubing tail on drill pipe and run in well through the section milled area to top of cement plug at 7250'. Lay a balanced cement plug from 7250' – 7280'. Pull up and reverse out excess. WOC and tag plug. DOGGR shall witness the tag and cementing operations.

13) Pick up a 7-1/4" bit and clean out to the kick off depth as directed by directional drilling contractor.

14) Pick up directional drilling assembly (mud motor, MWD, and gyro orienting sub and run in well. Run wireline gyro and orient drill bit to 60 degrees of high side. Pull wireline.

15) Directionally drill a 7-1/4" hole from KOP to 7650' (Top of Sesnon). Pull out and lay down directional equipment.

16) Run under-reamer and open hole to 11" from 7350' to 7650'. Circulate hole clean.

17) Run 7", flush joint casing to 7650' with top at approximately 7170'. Total casing is 12 joints (480'). Casing assembly is as follows:

    a. FJ float shoe tack welded on bottom
    b. 1 Joint 7" 26 lb/ft Hydril 513 blasted
    c. Float collar
    d. Landing collar with latch
    e. 12 joints, 7", 26 lb/ft Hydril 513 (400')
    f. Running tools

18) Cement casing as per attached cementing program.

19) Run remaining 7" casing to surface. The bottom joint of the 7" to be equipped with a drillable centering sub so that casing will align. Install seal flange and tubing head.

20) Make up 5-7/8" bit and locked up assembly and clean out to 7" casing shoe at 7650'. Drill up the drillable centering sub. Change hole over to XC polymer drill in fluid. Drill from 7650' to 7850'. Be prepared to add calcium carbonate in the event of fluid loss to formation.

21) Open hole to 13" from shoe to TD (7485'). (Four stages). Rig up wireline and run a 4 arm caliper log in the open hole section.

22) Run in with bit and place high viscosity pill across open hole . Pull above pill and change over to filtered clean 3% KCl. Fluid to be filtered to 2 micron.

23) Rig up wireline and run 4 arm caliper log in open hole section.

24) Run approximately 320' of 4-1/2", 0.012" shrouded WWS consisting of the following;

a. 7" Weatherford hydraulic set liner hanger/packer
b. 4-1/2", 17 lb/ft, LT&C, blank liner(1 joint)
c. 4-1/2", 17 lb/ft, LT&C, semi-perf liner (2 joints)
d. 4-1/2", 17 lb/ft, LT&C, WWS to be equipped with shroud and centralizers. (5 joints). Max O.D. is 6". Open top and bottom of shroud for flow-thru in the event of bridging.
e. 4-1/2" circulating shoe, double flapper.

25) Position liner. Set packer. Gravel pack with 20-40 Ottowa resin coated gravel and filtered 3% KCl water until packed off. Retain a sample of gravel to be sent to lab for sieve analysis.

26) Reverse out excess gravel. Wait 2 hours for pack to settle, bump down as possible. Restress pack. Repack if necessary.

27) Release from liner and pull out with gravel packing tools.

28) Run in hole with 1-1/4" tubing tail to bottom of liner and place breaker across liner. Inhibit reaction time of breaker by 12 hours. Immediately pull out and run back in with packer.

29) Pick up 7" HES G-6 packer assembly as follows:

a. 7" production HES G-6 packer.
b. 2-7/8" X 8' L-80 pup joint

DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

CHECK LIST-RECORDS RECEIVED AND WELL STATUS

OPERATOR **Southern Calif. Gas Co.** WELL DESIGNATIO **"Fernando Fee" 34-A**

API No. **03722044** SEC **34** , T. **3N** , R. **16W** , **SB** B. and M.

COUNTY: **Los Angeles** FIELD **Aliso Canyon**

Type of Notice: **Rework** **Date:** **12/12/2008** **Report Number:** **P208-427**

RECORDS RECEIVED (ATTACH PAGES IF REQUIRED)

	Date	OK	NEED	Remarks
Well Summary (OG100)				
History (OG103)				
E-Log				
Mud Log				
Dipmeter				
Directional				
Core and/or SWS				

NEW STATUS

DATE: _____

NOTICE OF RECORDS DUE

DATE: _____

DATE: _____

DATE: _____

DATE: _____

WELL STATUS INQUIRY

DATE: _____

DATE: _____

Well Stat

Change Required: _____

Change Done: _____

ABANDONMENTS/REABANDONMENTS/DRILLS/REDRILLS

ABANDONMENT DATABASE : _____ SURFACE INSPECTION NEEDED _____ COMPLETED _____
Date and Inspector

FINAL LETTER NEEDED _____ COMPLETED _____ DRILL/REDRILL DATABASE _____
(Date)

ENGINEER'S CHECK LIST

T-REPORT(S) _____ OPERATOR'S NAME _____ WELL DESIGNATION _____ SIGNATURE _____

LOCATION _____ ELEVATION: _____ CONFIDENTIAL RELEASE DATE: _____ PERMIT REQUIREMENTS MET _____

CLERICAL CHECK LIST

LOCATION CHANGE (OG165) _____ ELEVATION CHANGE (OG165) _____ RELEASE OF BOND (OG150) _____

REMARKS

RECORDS SCANNED: _____
(Date)

RECORDS APPROVED: _____
(Date and Engineer)

Modified OGD2

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

No. T 209-009

DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

Report on Operations

James D. Mansdorfer, Agent
SOUTHERN CALIFORNIA GAS CO.
9400 Oakdale Ave.
Chatsworth, CA 91313

Ventura, California
January 13, 2009

Your operations at well "Fernando Fee" 34-A **, API No.** 037-22044
Sec. 34 **, T.** 3N **, R.** 16W **,** SB **B. & M.** Aliso Canyon
Field in Los Angeles **County,**
were witnessed on 1/7/2009 **by** W. Beil **, representative of the supervisor.**

Operations Witnessed	Result – Def.	Engineer	Date
BOPE Test	Not Approved - 1	W. Beil	1/17/2009

The operations were performed for the purpose of testing the blowout prevention equipment and installation.

DECISION: NOT APPROVED

DEFICIENCIES NOTED

- **No Fittings to test Pipe Safety Valve or internal Preventer.**

tkc

Hal Bopp
State Oil and Gas Supervisor

By _____
Deputy Supervisor

OG109 Rev9/01 (9/89/GSR1/5M)

API No. 037-22044 DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES T 209-007

BLOWOUT PREVENTION EQUIPMENT MEMO

Operator Southern California Gas Co. Well "Fernando Fee" 34-A Sec. 34 T. 3N R. 16W
Field Aliso Cyn County Los Angeles Spud Date —

VISITS:

	Date	Engineer	Time	Operator's Rep.	Title
1st	01-07-09	W. Bgil	(09:00 to 16:00)	Mike Volkmar	- Consultant
2nd			(to)		

Contractor Key Energy Svcs Rig # 447 Contractor's Rep. & Title Jeff Mosier - Rig Supervisor
Casing record of well:

OPERATION: (Testing) ~~(inspecting)~~ the blowout prevention equipment and installation. Critical well? Y ☐ N ☑
DECISION: The blowout prevention equipment and its installation on the 8 5/8 " casing are approved.

Proposed Well Opns: Redrill . MACP: psi
Hole size: " fr. ' to ', " to ' & " to '

REQUIRED BOPE CLASS: III B 5M

CASING RECORD OF BOPE ANCHOR STRING					Cement Details	Top of Cement	
Size	Weight(s)	Grade(s)	Shoe at	CP at		Casing	Annulus
8 5/8	36#	N-80	7652'				

BOP STACK

API Symb.	Ram Size (in.)	Manufacturer	Model or Type	Vert. Bore Size (in.)	Press. Rtg.	Date Last Overhaul
A	—	Hydril		9"	5M	11/08
Rd	2 7/8	Shaffer		9"	✓	✓
✓	CSO	✓		9"	✓	✓

TEST DATA

Gal. to Close	Recov. Time (Min.)	Calc. GPM Output	psi Drop to Close	Secs. to Close	Test Date	Test Press.
					1/7/09	3500
					✓	5K
					✓	✓

ACTUATING SYSTEM

Accumulator Unit(s) Working Pressure 3M psi
Total Rated Pump Output gpm Fluid Level 3/4
Distance from Well Bore 50 ft.

	Accum. Manufacturer	Capacity	Precharge
1	Shaffer	80 gal.	1200 psi
2		gal.	psi

CONTROL STATIONS	Elec.	Hyd.	Pneu.
✓ Manifold at accumulator unit		✓	✓
✓ Remote at Driller's station			✓
Other:			

EMERG. BACKUP SYSTEM			Press.	Wkg. Fluid
✓ N_2 Cylinders	1	L= "	2100	gal.
Other:	2	L= "	2150	gal.
	3	L= "	2600	gal.
	(4)	L= "	2400	gal.
	5	L= "		gal.
	6	L= "		gal.
	TOTAL:			ga

HOLE FLUID MONITORING	Alarm Type: Audible	Alarm Type: Visual	Class
✓ Calibrated Mud Pit	✓	✓	A
✓ Pit Level Indicator	✓	✓	
✓ Pump Stroke Counter	✓	✓	B
✓ Pit Level Recorder	✓	✓	
— Flow Sensor			C
✓ Mud Totalizer			
— Calibrated Trip Tank			
Other:			

TOTAL:

AUXILIARY EQUIPMENT

	No.	Size (in.)	Rated Press.	Connections: Weld	Connections: Flange	Connections: Thread	Test Press.
✓ Fill-up Line							
✓ Kill Line		2"	5M		✓		5K
✓ Control Valve(s)	3		✓		✓		✓
✓ Check Valve(s)	1		✓		✓		✓
✓ Aux. Pump Connect.			✓		✓		✓
✓ Choke Line		3"	✓		✓		✓
✓ Control Valve(s)	7		✓		✓		✓
✓ Pressure Gauge					✓		
✓ Adjustable Choke(s)	2	2"	✓		✓		✓
✓ Bleed Line		2"			✓		
— Upper Kelly Cock							—
— Lower Kelly Cock		—	—				—
✓ Standpipe Valve							—
✓ Standpipe Press. Gau.							
✓ Pipe Safety Valve		2 1/8	✓				—
✓ Internal Preventer		✓	✓				—

Hole Fluid Type	Weight	Storage Pits (Type & Size)
Clay base MUD	10#	938 bbls

REMARKS AND DEFICIENCIES:

Weatherford Testing

Replace check valve - slow leak

No fittings to test PSV or IP.

OGD9 (9/00)

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS AND GEOTHERMAL RESOURCES

No. P **208-427**

010 (Old) Field Code 010 (New)
00 (Old) Area Code 00 (New)
30 (Old) Pool Code 30 (New)

PERMIT TO CONDUCT WELL OPERATIONS

Gas Storage

James D. Mansdorfer, Agent
Southern California Gas Company
9400 Oakdale Ave.
Chatsworth, CA 91313

Ventura, California
December 17, 2008

Your proposal to **redrill** well **"Fernando Fee" 34-A**, A.P.I. No. **037-22044**, Section **34**, T. **3N**, R. **16W**, **S.B.** B. & M., **Aliso Canyon** Field, **Sesnon-Frew** Pool, Los Angeles, County, dated **12/12/08**, received **12/12/08** has been examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED:

1. Blowout prevention equipment, as defined by this Division's publication No. M07, shall be installed and maintained in operating condition and meet the following minimum requirements:
   a) **Class III 5M** for plugging operations.
   b) **Class III B 5M** during sidetracking operations.
2. Hole fluid of a quality and in sufficient quantity is used to control all subsurface condition in order to prevent blowouts.
3. Blowout prevention practice drills are conducted at least weekly and recorded on the tour sheet. A practice drill may be required at the time of the test/inspection.
4. A Division approved blowout prevention and control plan shall be available during the proposed operations.
5. The 7" casing is cemented with sufficient cement to fill behind the casing to at least 500 feet above all oil, gas zones and/or anomalous pressure intervals and to at least 100 feet above the base of freshwater zone, if present.
6. The 7" casing and 4-1/2" liner must be of sufficient quality to withstand anticipated pressures resulting from gas storage operations.
7. No program changes are made without prior Division approval.
8. **THIS DIVISION SHALL BE NOTIFIED TO:**
   a. Inspect the blowout prevention equipment prior to commencing downhole operations.
   b. Witness a test of the installed blowout prevention equipment prior to commencing sidetracking operations.

Engineer: Steve Fields

Phone: (805) 654-4761

Hal Bopp
State Oil and Gas Supervisor

By _____
Bruce Hesson, Deputy Supervisor

A copy of this permit and the proposal must be posted at the well site prior to commencing operations. Records for work done under this permit are due within 60 days after the work is completed or the operations have been suspended. Issuance of this permit does not preclude the recipient from the obligation of being in compliance with all applicable Federal, State and Local laws, regulations and ordinances.

OG 111

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

NOTICE OF INTENTION TO REWORK / REDRILL WELL

P208-427

OLD DD 3D-Sesnon Frell

C.E.Q.A. INFORMATION (when redrilling or deepening only)			
Exempt ☐	Neg. Dec. ☐	E.I.R. ☐	Document not required by local jurisdiction ☐
Class _____	S.C.H. No.	S.C.H. No.	
See Reverse Side			

FOR DIVISION USE ONLY			
	Forms		EDP Well
Bond	OGD114 ✓	OGD121 ✓	File
10001 060	111 ✓	115 ✓	

This notice and an indemnity or cash bond must be filed, and approval given, before the rework/redrill begins. *(See the reverse side for bonding information.)* If operations have not commenced within one year of receipt of the notice, this notice will be considered canceled.

In compliance with Section 3203, Division 3, Public Resources Code, notice is hereby given that it is our intention to

redrill *(Circle one)* well Fernando Fee 34A API No 037-22044

Sec. 34 T. 3N R. 16W SBB.&M. Aliso Canyon Field

Los Angeles County.

GS

1. The complete casing record of the well (present hole), including plugs and perforations, is as follows:

13-3/8",	54.5 lb/ft,	K55,	0'- 1003'	(cmtd)
8-5/8",	36, 40 lb/ft,	N80,	0'- 7652'	(cmtd)
6-5/8",	24 lb/ft,	N80,	0' - 7500'	(landed on Baker Retrieva D packer)
5-1/2",	20 lb/ft,	K55,	7554' – 7848'	Wire-wrapped screen, gravel packed in 15" hole with 20-40 gravel

The 8-5/8" casing is perforated with four ½" holes at 7570'. WSO in 8-5/8" at 7272'. Homco casing patch in 8-5/8" (2080' – 2120')

2. The total depth is: 7855' feet. The effective depth is: 7848 feet.

3. Present completion zone (s): Sesnon *(Name)* Anticipated completion zone (s): Sesnon *(Name)*

4. Present zone pressure: Variable storage pressure psi. Anticipated/existing new zone pressure: Variable storage pressure psi.

5. Last produced: _____ *(Date)* _____ *(Oil, B/D)* _____ *(Water, B/D)* _____ *(Gas, Mcf/D)*

(or)

Last injected: _____ *(Date)* _____ *(Water, B/D)* _____ *(Gas, Mcf/D)* _____ *(Surface pressure, psig)*

6. Is this a critical well according to the definition on the reverse side of this form? Yes ☐ No X

The proposed work is as follows: *(A complete program is preferred and may be attached.)*

DEC 12 2008

1. Move-in / rig up kill well. Install Class III 5000 psi BOPE.
2. Pull 2-7/8" tubing and completion assembly.
3. Pick up casing cutter and cut the 6-5/6" innerstring at 7400'. Pull and lay down innerstring.
4. Clean out well to 7848'. Lay a cement abandonment plug from 7848' to 7350'.
5. Set a bridgeplug at 7350' (or 4' above nearest collar).
6. Orient and set an 8-5/8" whipstock on the bridgeplug at 7350'.
7. Kick off and drill a 7- ¼" hole from 7350' – 7650' (top of Sesnon). Open hole to 10". Cement 7" flush casing from 7650' to surface.
8. Drill a 6-1/8" hole from 7650' – 7850'. Open hole to 12".
9. Run new 4-1/2" liner wws and gravel pack with 20-40 gravel.
10. Run 2-7/8" tubing, packer, and completion assembly. Rig – down / move out.

For redrilling or deepening: Sidetrack old completion (7350' – 7850') *(Proposed bottom-hole coordinates)* 7850' *(Estimated true vertical depth)*

The division must be notified if changes to this plan become necessary.

Name of Operator	Telephone Number	
Southern California Gas Company	818 700 3810	
Address	**City**	**Zip Code**
9400 Oakdale Av	Chatsworth, Ca	91313
Name of Person Filing Notice	**Signature**	**Date**
Dan Neville		12/12/08

File In Duplicate

OG107 (7/97/GSR/5M)

C.E.Q.A. INFORMATION

Information for compliance with the California Environmental Quality Act of 1970 (C.E.Q.A.).

If an environmental document has been prepared by the lead agency, please submit a copy of the document with this notice or supply the following information:

Lead Agency: _____

Lead Agency Contact Person: _____

Address: _____

_____

Phone: _____

FOR DIVISION USE ONLY
District review of environmental document (if applicable)? Yes ☐ No ☐
Remarks: _____

CRITICAL WELL DEFINITION

As defined in the California Code of Regulations, Title 14, Section 1720 (a), "Critical well" means a well within:

1. 300 feet of the following:
   a. Any building intended for human occupancy that is not necessary to the operation of the well; or
   b. Any airport runway.
2. 100 feet of the following:
   a. Any dedicated public street, highway, or nearest rail of an operating railway that is in general use;
   b. Any navigable body of water or watercourse perennially covered by water;
   c. Any public recreational facility such as a golf course, amusement park, picnic ground, campground, or any other area of periodic high-density population; or
   d. Any officially recognized wildlife preserve.

Exceptions or additions to this definition may be established by the State Oil and Gas Supervisor upon his or her own judgment or upon written request of an operator. The written request must contain justification for such an exception.

WELL OPERATIONS REQUIRING BONDING

1. Drilling, redrilling, or deepening any well.
2. Milling out or removing a casing or liner.
3. Running and cementing casing or tubing.
4. Running and cementing liners and inner liners.
5. Perforating casing in a previously unperforated interval for production, injection, testing, observation, or cementing purposes.
6. Drilling out any type of permanent plug.
7. Reentering an abandoned well having no bond.

DEC 12 2008

OPERATOR La Cal Energy
LSE & NO SEZU FE-34-A
MAP 254

Water Polluters
So. Ca. Gas

	( )	( )	( )	( )	( )	( )
ACTION	Rec'd	Rework	Rework			
ACT DATE	8-24-79	3-26-91	3-26-91			
PERMIT NUMBER	279-270	291-157	291-157			
CHECKED BY/DATE						
MAP LETTER DATED	2-16-80					
SYMBOL	✱		N/C			

	REC'D	NEED	REC'D	NEED	REC'D	NEED	REC'D	NEED	REC'D	NEED	REC'D	NEED
NOTICE	9-4-79		3/26/91		3/26/91							
HISTORY	2-8-80				6-28-91							
SUMMARY	2-8-80											
IES/ELECTRIC LOG	1-27-80		DUAL SPACED 10/11/90 + 11/1/90 THERMAL DECAY TIME LOG									
DIRECTIONAL SURV	2-8-80		Temp. Log 11/1/90									
CORE/SWS DESCRIP												
OTHER Velocity Survey 1-14-80 C/Bond Log 1-27-80					CALIPER 6-14-91 THERMAL DECAY 6-10-91							
RECORDS COMPLETE	✱				7-29-91	SPM						

ENGINEERING CHECK

T-RESPONS
OPERATOR'S NAME
WELL DESIGNATION
LOC & ELEV
SIGNATURE
SURFACE INSPECTION
FINAL LETTER OK

CLERICAL CHECK

POSTED TO 121 170 MAILED FINAL LETTER MAILED
RELEASED BOND

REMARKS:

STATE OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL AND GAS

REPORT ON PROPOSED CHANGE OF WELL DESIGNATION

Ventura, California

November 12, 1991

R. D. Phillips, Agent
SOUTHERN CALIFORNIA GAS COMPANY
P.O.Drawer 3249 Mail Location 22GO
Los Angeles, CA 90051

Your request, dated July 24, 1991, proposing to change the designation of well(s) in Sec. 34, T. 3N, R 16W, S.B. B. & M., Aliso Canyon field, Los Angeles County, District No. 2, has been received.

The proposed change in designation, in accordance with Section 3203, Public Resources Code, is authorized as follows:

FROM	TO
"SFZU" FF-31 (037-00685)	"Fernando Fee" 31 (037-00685)
"SFZU" FF-33 (037-00687)	"Fernando Fee" 33 (037-00687)
"SFZU" FF-34 (037-00688)	"Fernando Fee" 34 (037-00688)
"SFZU" FF-35 (037-00689)	"Fernando Fee" 35 (037-00689)
"SFZU" MX-1A (037-21891)	"Mission Adrian" 1A (037-21891)
"SFZU" MA-1B (037-21892)	"Mission Adrian" 1B (037-21892)
"SFZU" MA 5 (037-00695)	"Mission Adrian" 5 (037-00695)
"SFZU" MA 5-A (037-22309)	"Mission Adrian" 5A (037-22309)
"SFZU" PF-3 (037-00646)	"Porter Fee" 3 (037-00646)
"SFZU" FF-34-A (037-22044)	"Fernando Fee" 34-A (037-22044)
"SFZU" FF-34-B (037-22302)	"Fernando Fee" 34-B (037-22302)
"SFZU" MA-3 (037-00693)	"Mission Adrian" 3 (037-00693)
"SFZU" MS-4 (037-00694)	"Mission Adrian" 4 (037-00694)
"SFZU" PF-1 (037-00644)	"Porter Fee" 1 (037-00644)
"SFZU" PF-2 (037-00645)	"Porter Fee" 2 (037-00645)

M. G. MEFFERD, State Oil and Gas Supervisor

By _____
Deputy Supervisor
PATRICK J. KINNEAR

OGD157 (10/85/DWRR/1M)

SUBMIT IN DUPLICATE

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

DIVISION OF OIL AND GAS
RECEIVED
JUN 28 1991
VENTURA, CALIFORNIA

History of Oil or Gas Well

Operator Southern California Gas Company Field Aliso Canyon County Los Angeles
Well ~~Fernando Fee #34-A~~ "SFZU" FF-34-A, Sec. 34, T 3N, R 16W, S.B. B. & M.
A.P.I. No. 037-22044 Name R. D. Phillips (Person submitting report) Title Agent (President, Secretary or Agent)
Date June 24, 1991

Signature J. B. Lane for R. D. Phillips

P. O. Box 3429 Terminal Annex, Los Angeles, CA 90051 (213) 689-3925
(Address) (Telephone Number)

History must be complete in all detail. Use this form to report all operations during drilling and testing of the well or during redrilling or altering the casing, plugging, or abandonment with the dates thereof. Include such items as hole size, formation test details, amounts of cement used, top and bottom of plugs, perforation details, sidetracked junk, bailing tests and initial production data.

Date 1991	
5-06	Moved in and rigged up. Hooked up kill lines. Well had 400 psi on tubing and casing. Pumped 142 Bbls to fill well.
5-07	Installed equalizing back pressure valve in donut. Removed xmas tree. Installed 8" 5000# BOPE. Tested blind rams to 4000 psi, pipe rams to 4000 psi, annular preventer to 2500 psi, choke manifold to 4000 psi. Backed out donut studs.
5-08	Replaced locked screw and gland nut on tubing head. Filled well with 81 BBls. Pulled seals out of Baker packer at 7500'. Pulled and laid down 248 joints of 3-1/2" J-55 EUE 8RD tubing. Changed pipe rams to 2-7/8". Made up full bore packer. Ran in well. Found holes from 2093' to 2098'. Established breakdown rate of 3 Bbls min. at 800 psi. Pulled up to 2055'.
5-09	Pulled out of well with full bore packer. Ran minimum I.D. caliper log from 7490' to surface. Ran 7-5/8" bit on 8-5/8" 40# casing scraper. Picked up and measured 2-7/8" drill pipe. Tagged packer at 7450' with drill pipe.
5-10	Pulled out of well. Rigged up Schlumberger. Ran CPET log from 4000' to surface. Pulled out of rope socket in lubricator dropping tool down hole. Made up and ran 7-3/8" OD overshot with 3-3/8" grapple.
5-11	Ran in well with 7-3/8" OD overshot to 7456'. Pulled out of well recovering logging tool. Ran Schlumberger METT log from 7490' to surface. Rigged down Schlumberger. Made up 8-5/8" retrievable bridge plug. Ran in well to 1871'.

Mailed to DOG 6/27

OG103 (10/89/GSR1/5M)

5-13 Ran in well with retrievable bridge plug and set at 6500'. Pulled out of well. Made up #2 retrievable bridge plug and set at 120'. Tested bridge plug to 1000 psi. Removed BOPE, tubing head and seal flange. Made up 8-5/8" 40# spear and rigged up casing jacks.

5-14 Speared 8-5/8" 40# casing and pulled 300,000#. Slips would not move. Cut 13-3/8" casing slips. Released spear. Laid down 13-3/8" well head and cut slips out of head. Lowered casing head 32-3/8". Rewelded 13-3/8" casing head.

5-15 X-rayed weld. Landed 8-5/8" casing with 270,000# hanging on slips in 13-3/8" wellhead. Installed 8-5/8" pressure seal and innerstring spool. Re-installed BOPE and tested to 2000 psi for 20 minutes. Energized seals and tested to 5000 psi. Moved top bridge plug from 120' to 2148'.

5-16 Changed over to clean KCL water at 2148'. With drill pipe hung at 2116', dumped 6 sacks of 20-40 sand down drill pipe. Waited one hour. Ran in and tagged top of sand at 2137, 11' above bridge plug. Pulled out of well. Made up full bore packer. Ran in well and set packer at 2029'. Mixed and pumped 75 cu.ft. cement with 3% CaCl. Displaced with 69-1/2 cu.ft. of 2% KCL water.

5-17 Released and pulled out of well with full bore packer. Made up 7-5/8" bit and 8-5/8" scraper and drilled out cement from 2065' to 2110'. Pressure tested 8-5/8" casing to 600 psi. Pulled out of well. Ran in well with bridge plug retrieving head. Circulated sand out of well. Latched onto bridge plug at 2148' and pulled out of well. Ran in well to 1876' with bridge plug retrieving head.

5-18 Ran in well to 6500'. Released bridge plug. Pulled out of well. Picked up 358' of 2-3/8" CS Hydril tubing with 45 degree shoe on bottom joint. Ran in well. Tagged fill at 7822'. Cleaned out fill to 7844'. Circulated well clean. Pulled out of well to 5906'.

5-20 Pulled out of well and laid down 2-3/8" CS Hydril tubing. Picked up Baker packer test seals. Ran in well to packer at 7489'. Set 15,000# on packer. Tested seals to 600 psi for 20 minutes. Pulled and laid down 2-7/8" drill pipe to 1876'.

5-21 Pulled kill string. Laid down test seals. Ran in well with Homco 8-5/8" casing patch and set at 2080'-2120'. Pulled out of well laying down Homco casing patch setting tool. Ran in well with kill string.

5-22 Pulled and laid down kill string. Rigged up casing tongs. Changed pipe rams to 6-5/8". Rigged up Torque-and-Turn. Made up seal assembly x-over to 6-5/8" 24# Atlas Bradford FL4S casing. Started running 6-5/8" AB-FL4S casing.

5-23 Ran in well with 63 joints of 6-5/8" innerstring (185 total to 7460'). Pumped 125 bbls of 2% KCL with Exxon coat 7726' in 6-5/8" x 8-5/8" annulus. Stabbed into 8-5/8" Baker retrieva "D" packer with joint #186 (7500' total). Landed 6-5/8" innerstring with 15,000# on packer. Nippled up tubing head. Changed pipe rams to 2-7/8". Tested seal flange and tubing head to 5000 psi.

5-24 Finished testing BOPE to 2000 psi. Ran Otis 6-5/8" "BWB" production packer on wireline and set at 7430'. Picked up Otis production seals and equipment. Picked up 2-7/8" tubing and ran in well Hydrotesting to 4000 psi.

5-25 Finished Hydro-testing 2-7/8" tubing in well. Ran tubing to 7430'. Spaced out and changed over to 2% KCL with EXXON COAT 7726. Stabbed into packer and pulled 20,000# over tubing weight to check latch. Landed 2-7/8" tubing with 8000# down on Otis 6-5/8" "BWB" packer. Removed BOPE. Installed xmas tree and tested to 5000 psi. Released rig.

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL AND GAS

No. P291- 157
Field Code 010
Area Code 00
New Pool Code 30
Old Pool Code 30

PERMIT TO CONDUCT WELL OPERATIONS
GAS STORAGE

R.D. Phillips, Agent
Southern Calif. Gas Company
810 S. Flower St.
Los Angeles, CA. 90017

Ventura, California
March 28, 1991

Your proposal to rework well "SFZU" FF-34-A, A.P.I. No. 037-22044, Section 34, T. 3 N, R. 16W, S.B. B.&M., Aliso Canyon field, any area, Sesnon-Frew pool, Los Angeles County, dated 3/26/91, received 3/26/91, has been examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED THAT:

1. Blowout prevention equipment conforming to DOG Class III 3M requirements shall be installed and maintained in operating condition at all times.
2. Hole fluid of a quality and in sufficient quantity is used to control all subsurface conditions in order to prevent blowouts.
3. Wire line operations are conducted through at least a 3M lubricator.
4. Blowout prevention practice drills are conducted at least weekly and recorded on the tour sheet.
5. This office shall be consulted before initiating any changes or additions to this proposed operation, or if operations are to be suspended.
6. THIS DIVISION SHALL BE NOTIFIED:
   a. To inspect the installed blowout prevention equipment before commencing downhole operations.
   DOG waived - NEA 5/7/91

NOTE: PLEASE FILE NOTICES USING THE CORRECT WELL NAME AND NUMBER.

Blanket Bond
SF:ljg

Engineer Steve Fields

Phone (805) 654-4761

M.G. MEFFERD, State Oil and Gas Supervisor

By Patrick J. Kinnear
Deputy Supervisor

A copy of this permit and the proposal must be posted at the well site prior to commencing operations. Records for work done under this permit are due within 60 days after the work has been completed or the operations have been suspended.
OG111

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL AND GAS

DIVISION OF OIL AND GAS
RECEIVED
MAR 26 1991
...ORNIA

Notice of Intention to Rework Well

This notice and indemnity or cash bond shall be filed, and approval given, before rework begins. If operations have not commenced within one year of receipt of the notice, this notice will be considered cancelled.

FOR DIVISION USE ONLY		
BOND	FORMS	
	OGD 114	OGD 121
BB	✓	✓

DIVISION OF OIL AND GAS

In compliance with Section 3203, Division 3, Public Resources Code, notice is hereby given that it is our intention to rework well "A730" IF ~~Fernando Fee~~ 34-A (Well designation), API No. 037-22044

Sec. 34, T. 3N, R. 16W, S.B. B. & M., Aliso Canyon Field, Los Angeles County.

The present condition of the well is as follows:

1. Total depth 7855'

2. Complete casing record, including plugs and perforations (present hole)

13-3/8"	54.5#	K55	Cemented at 1003'.
8-5/8"	36 & 40#	N-80	Cemented at 7652'; Jet perforated four 1/2" HPF at 7570', WSO 7569'.
5-1/2"	20#	K55	Top at 7554' and landed at 7848', .010 wire wrapped screen 7561' - 7602', 7644' - 7847'.

3. Present producing zone name Sesnon ; Zone in which well is to be recompleted _____

4. Present zone pressure 2800 psig ; New zone pressure _____

5. Last produced Gas Storage Operation (Date) _____ (Oil, B/D) _____ (Water, B/D) _____ (Gas, Mcf/D)

(or)

Last injected _____ (Date) _____ (Water, B/D) _____ (Gas, Mcf/D) _____ (Surface pressure, psig)

6. Is this a critical well according to the definition on the reverse side of this form? ☐ (Yes) ☒ (No)

The proposed work is as follows:

1. Move in, rig up and install BOPE.
2. Pull tubing and clean out well.
3. Run casing integrity logs.
4. Squeeze cement at approximately 1488'.
5. Run casing patch across hole or split at 1488'.
6. Run and install innerstring casing.
7. Run and install tubing.
8. Remove BOPE and complete well.

Note: If well is to be redrilled, show proposed new bottom-hole coordinates and true vertical depth.

It is understood that if changes in this plan become necessary, we are to notify you immediately.

Address Box 3249, Terminal Annex (Street)

Los Angeles, California 90051 (City) (State) (Zip)

Telephone Number (213) 689-3925

Southern California Gas Co. (Name of Operator)

By J. B. Lane for R. D. Phillips (Agent) (Name-Printed)

(Name-Signature) 3/26/91 (Date)

Type of Organization Corporation (Corporation, Partnership, Individual, etc.)

OG107 (2/86/DWRR/5M)

So. CA. Gas Co.

SHUT IN 22 days PRIOR SURVEY.

INJ/WD _____ HOURS PRIOR SHUT IN.

34-3-B

SF24

ALISO CYN. FF 34A

(037-22.044)

FF34A 9-27-89

70 90 110 130 150 170

0 1 2 3 4 5 6 7 8

1000 2000 3000 4000 5000 6000 7000 8000 9000

OK

T 2310

C 2310

100' MIN.

4-25-84

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

WELL SUMMARY REPORT

SUBMIT IN DUPLICATE

P-45

Operator Southern Calif. Gas Co., Well No. Fernando Fee 34-A, API No. 037-22044,

Sec. 34, T. 3N, R. 16W, S.B. B. & M., Aliso Canyon Field, Los Angeles County.

Location 4078' south and 2152' east from Station #84
(Give surface location from property or section corner, or street center line and/or lambert coordinates)

. Elevation of ground above sea level 2212 feet.

All depth measurements taken from top of Kelly Bushing which is 21 feet above ground.
(Derrick Floor, Rotary Table or Kelly Bushing)

In compliance with Sec. 3215, Division 3 of the Public Resources Code, the information given herewith is a complete and correct record of the present condition of the well and all work done thereon, so far as can be determined from all available records.

Date January 28, 1980

Signed P. S. Magruder, Jr.

D. S. Smiley
(Engineer or Geologist)

Title Agent

DIVISION OF OIL AND GAS
RECEIVED
FEB - 8 1980
SANTA PAULA, CALIFORNIA

Commenced drilling October 5, 1979

Completed drilling December 20, 1979

Total depth (1st hole) 7855' (2nd) - (3rd) -

Present effective depth 7855'

Junk None

GEOLOGICAL MARKERS DEPTH

Formation and age at total depth Miocene

Commenced producing - (Date) Flowing/gas lift/pumping (Cross out unnecessary words)

Name of producing zone Sesnon (S-4 & S-8)

	Clean Oil bbl. per day	Gravity Clean Oil	Per Cent Water including emulsion	Gas Mcf. per day	Tubing Pressure	Casing Pressure
Initial production	Gas Storage Well					
Production after 30 days						

CASING RECORD (Present Hole)

Size of Casing (A. P. I.)	Depth of Shoe	Top of Casing	Weight of Casing	Grade and Type of Casing	New or Second Hand	Size of Hole Drilled	Numbers of Sacks or Cubic Feet of Cement	Depth of Cementing if through perforations
13-3/8"	1003'	Surf.	54.5	K-55 Butt.	New	17-1/2"	1030 CF	-
8-5/8"	7652'	Surf.	36 & 40	N-80 Butt.	New	12-1/4"	1853 CF	-
5-1/2"	7848'	7554'	20	K-55 ST&C	New	7-5/8" opened to 15"	Gravel packed	-

PERFORATED CASING
(Size, top, bottom, perforated intervals, size and spacing of perforation and method.)

8-5/8" - Jet perforated four 1/2" HPF 7570' cp'd, 7569' WSO

5-1/2" - .010" wire wrapped screen 7561'-7602', 7644'-7847'

Was the well directionally drilled? Yes If yes, show coordinates at total depth 504' north and 328' west

Electrical log depths 7662' and 7855' Other surveys Compensated Neutron-Density

OG 100

ATTACH ONE COPY OF EACH LOG AND SURVEY

27907-705 10-74 6M ② OSP

SUBMIT IN DUPLICATE

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

History of Oil or Gas Well

Operator Southern California Gas Company Field or County Los Angeles
Well Fernando Fee #34-A, Sec. 34, T 3N, R 16W, S.B. B. & M.
A.P.I. No. 037-22044 Name P S Magruder, Jr (Person submitting report) Title Agent (President, Secretary or Agent)
Date January 16 1980, 19.....

Signature P S Magruder Jr

P O Box 3249 Terminal Annex, Los Angeles, California (213) 689 3561
(Address) (Telephone Number)

History must be complete in all detail. Use this form to report all operations during drilling and testing of the well or during redrilling or altering the casing, plugging, or abandonment with the dates thereof. Include such items as hole size, formation test details, amounts of cement used, top and bottom of plugs, perforation details, sidetracked junk, bailing tests and initial production data.

Date

Fernando Fee #34-A
GWO #98613 KZ
PROGRAM

Drill and complete as a gas storage well in the S-4 and S-8 sands with an approximate bottom hole location 530' north and 335' west of surface location. Surface location is 4,078' south and 2,152' east of Station #84.

1979

10-5 0 Day. Spudded at 5:00 p.m., 10-5-79. Drilled 17-1/2" hole from 18' to 108' with Bit #1.

10-6 1st Day. Drilled 17-1/2" hole from 108' to 476' with Bit #1.

10-7 2nd Day. Drilled 17-1/2" hole from 476' to 946' with Bit #1.

10-8 3rd Day. Drilled 17-1/2" hole from 946' to 1,003' with Bit #1. Circulated hole clean and conditioned mud for 13-3/8" casing. Ran 26 joints of 13-3/8" K-55 54.5# buttress casing equipped with a Bakerline stab-in float guide shoe of 2.50'. Total of 1,007.53' on hook. Bottom 2 joints of casing equipped with 3 scratchers and 2 centralizers each with a 5th scratcher on the 3rd collar. Guide shoe and two bottom collars treated with thread lock compound. Picked up 4-1/2" drill pipe and stabbed into stab-in cement float shoe at 1,003'.

10-9 4th Day. Halliburton pumped 50 cu.ft. of water ahead of 800 cu.ft. of class "G" cement with 8% gel and 3% calcium chloride, followed by 200 sacks of class "G" cement with 3% calcium chloride. Displaced through 4-1/2" drill pipe with 80 cu.ft. of water. Had approximately 50 cu.ft. of cement returns to surface. Pulled out 4-1/2" drill pipe and cut off conductor and 13-3/8" surface casing. Welded on casing head and tested weld to 2,000 psi. X-rayed wellhead, O.K. Set in BOPE.

OG103(5-70 DWRR-15M)

10-10 5th Day. Installed BOPE and attempted blank ram test with water. Had pump failure. Attempted test with nitrogen, obtained a 950 psi build up. Ran in with open end drill pipe to 998' and attempted to circulate. Pumped away approximately 150 bbls of drilling fluid.

10-11 6th Day. With open end 4-1/2" drill pipe at 998', Dowell pumped and equalized 55 cu.ft. of class "G" cement. Cement in place at 2:00 a.m. Waited on cement to harden. Tested blank rams and 13-3/8" casing to 2,700 psi at 9:00 a.m., O.K. Set test plug in 13-3/8" casing head and tested blank rams and manifold with nitrogen for 20 minutes, O.K. Tested pipe rams and Hydril with nitrogen to 2,700 psi for 20 minutes, O.K. Installation of BOPE inspected and approved by the D.O.G.

10-12 7th Day. Ran in with a drilling assembly and drilled out cement from 951' to 1,003'. Drilled 12-1/4" hole from 1,003' to 1,120' with Bit #2.

10-13 8th Day. Rig down for repairs until 12:01 a.m., 10-14-79.

10-14 9th Day. Drilled 12-1/4" hole from 1,120' to 1,402' with Bit #2.

10-15 10th Day. Drilled 12-1/4" hole from 1,402' to 1,701' with Bit #3.

10-16 11th Day. Drilled 12-1/4" hole from 1,701' to 1,783' with Bit #3 and to 1,985' with Bit #4.

10-17 12th Day. Drilled 12-1/4" hole from 1,985' to 2,126' with Bit #4. Backed off drill pipe at 957'. Screwed into fish. Pulled out, changed drilling assembly and drilled 12-1/4" hole to 2,187' with Bit #5.

10-18 13th Day. Drilled 12-1/4" hole from 2,187' to 2,424' with Bit #5.

10-19 14th Day. Drilled 12-1/4" hole from 2,424' to 2,744' with Bit #6.

10-20 15th Day. Drilled 12-1/4" hole from 2,744' to 3,007' with Bit #7.

10-21 16th Day. Drilled 12-1/4" hole from 3,007' to 3,328' with Bit #8.

10-22 17th Day. Drilled 12-1/4" hole from 3,328' to 3,460' with Bit #9. Pulled up inside surface pipe. Rig down for repairs at 9:00 a.m.

10-23 18th Day. Rig down 24 hours for repairs.

10-24 19th Day. Rig down 8 hours for repairs. Drilled 12-1/4" hole from 3,460' to 3,669' with Bit #9.

10-25 20th Day. Drilled 12-1/4" hole from 3,669' to 3,869' with Bit #10. Rig down 10 hours for pump repairs.

10-26 21st Day. Drilled 12-1/4" hole from 3,869' to 4,102' with Bit #10. Rig down 3 hours for repairs.

10-27 22nd Day. Drilled 12-1/4" hole from 4,102' to 4,373' with Bit #11.

10-28 23rd Day. Drilled 12-1/4" hole from 4,373' to 4,473' with Bit #11. Pulled out and laid down jars and stabilizers. Ran in with Dyna-drill #1.

10-29 24th Day. Dyna-drilled 12-1/4" hole from 4,473' to 4,577' with Bit #12.

10-30 25th Day. Rig down for repairs. (24 hours).

10-31 26th Day. Rig down for repairs (24 hours).

11-1 27th Day. Rig down 24 hours for repairs.

11-2 28th Day. Rig down one hour for repairs. Dyna-drilled from 4,577' to 4,664' with Bit #13 and to 4,675' with Bit #14.

11-3 29th Day. Dyna-drilled 12-1/4" hole from 4,675' to 4,737' with Bit #14. Ran Drilling assembly and reamed from 4,439' to 4,702' with Bit #15.

11-4 30th Day. Directionally drilled 12-1/4" hole from 4,737' to 4,772' with Bit #15. Dyna-drilled from 4,772' to 4,795' with 12-1/4" Bit #16 on Dyna-drill #ID guided by Eastman D.O.T. (Rig down 3 hours for repairs).

11-5 31st Day. Dyna-drilled 12-1/4" hole from 4,795' to 4,880' with Bit #17 on Dyna-drill #1E, guided by Eastman D.O.T.

11-6 32nd Day. Dyna-drilled 12-1/4" hole from 4,880' to 4,902' with Bit #18 on Dyna-drill #1E guided by Scientific Drilling Control.

11-7 33rd Day. Dyna-drilled 12-1/4" hole from 4,902' to 4,933' with Bit #19. Guided by Scientific Eye.

11-8 34th Day. Directionally drilled 12-1/4" hole from 4,933' to 5,001' with Bit #20.

11-9 35th Day. Directionally drilled 12-1/4" hole from 5,001' to 5,160' with Bit #21. (Rig down 4 hours for repairs).

11-10 36th Day. Directionally drilled 12-1/4" hole from 5,160' to 5,630' with Bit #22.

11-11 37th Day. Directionally drilled 12-1/4" hole from 5,630' to 5,660' with Bit #22 and to 5,907' with Bit #23.

11-12 38th Day. Directionally drilled 12-1/4" hole from 5,907' to 6,280' with Bit #23 and to 6,321' with Bit #24.

11-13 39th Day. Directionally drilled 12-1/4" hole from 6,321' to 6,621' with Bit #24.

11-14 40th Day. Directionally drilled 12-1/4" hole from 6,621' to 6,821' with Bit #25 and to 6,829' with Bit #26.

11-15 41st Day. Directionally drilled 12-1/4" hole from 6,829' to 7,092' with Bit #26.

11-16 42nd Day. Directionally drilled 12-1/4" hole from 7,092' to 7,204' with Bit #27. Lost fluid returns at 7,204'. Pulled out to 6,734' and attempted to circulate.

11-17 43rd Day. Mixing lost circulation materials and conditioning mud at 1,004'. Rig down for repairs on mud system 12 hours.

11-18 44th Day. Repaired rig 6 hours. Regained circulation. Building mud weight to 82#/cu.ft.

11-19 45th Day. Raised mud weight to 82# at 1,300'. Staged in hole 10 stands at a time raising mud weight to 82#. Lost circulation at 3,987'. Pulled out to 1,000'. Building mud volume.

11-20 46th Day. Pumped lost circulation material in at 1,189' and 1,000'. Regained 100% returns. Ran in to 6,000'. Circulated with 100% returns.

11-21 47th Day. Rig down 11 hours for repairs to air compressor. Directionally drilled 12-1/4" hole from 7,204' to 7,243'.

11-22 48th Day. Directionally drilled 12-1/4" hole from 7,243' to 7,349' with Bit #28, and to 7,363' with Bit #29.

11-23 49th Day. Directionally drilled 12-1/4" hole from 7,363' to 7,557' with Bit #29 and to 7,662' with Bit #30.

11-24 50th Day. Made wiper trip from 7,662' to 6,588'. Circulated and cleaned out fill from 7,656' to 7,662'. Pulled out and ran Welex Induction and Caliper log from 7,612' to 1,004'. Ran in with RR#30 and drilled 12-1/4" hole from 7,662' to 7,670'.

11-25 51st Day. Circulated and conditioned mud. Pulled and ran 10 stands. Cleaned out fill from 7,664' to 7,670'. Circulated hole clean. Pulled out and laid down 12-1/4" drilling tools and 7" drill collars. Changed from 8 to 10 lines. Changed from 4-1/2" to 8-5/8" rams. Pulled bit guide and rigged up to run 8-5/8" casing.

11-26 52nd Day. Ran 8-5/8" casing using Baker torque turn and API modified thread lubricant as follows: 48 joints (1972.29') of 8-5/8" 40# N-80 Buttress from 7670' to 5,636', 137 joints (5663.08') of 8-5/8" 36# Buttress from 5636' to 34'. Used one joint of 8-5/8" 40# Buttress thread casing as landing joint. Bottom 25 joints of 40# casing were grit blasted. Casing was fitted with a Baker float shoe at 7670', a Baker float collar at 7541', two B & W centralizers and 3 scratcher clusters on bottom four joints. B & W centralizers on every other joint up to 1,000'. Thread locking compound used on bottom four joints. Circulated mud adding corrosion inhibitor at ratio of 5 gallons per 100 barrels of mud. Cemented casing as follows:

Pumped 500 cu.ft. of CW7 wash followed with 1,200 cu.ft. of 1-1 class "G" cement Lite-poz 7 premixed with 1% "D-65" and 0.5% "D-60" followed with 350 sacks of class "G" cement premixed with 0.75% "D-65" and 0.5% "D-60" followed with 250 cu.ft. of Dowell Self-stress mixed with 0.5% "D-65" and 0.2% "D-108". Displaced with 2,680 cu.ft. of water. Cement in place 9:35 p.m. Lost returns while cementing - full returns when cement was in place.

11-27 53rd Day. Removed B.O.P.E. Installed seal flange. Cut off 8-5/8" casing. Installed tubing head and pressure tested seal flange to 5,000 psi for 30 minutes. O.K. Reinstalled B.O.P.E. Cut and welded flow nipple. (Landed casing with 270,000# on slips).

11-28 54th Day. Reinstalled B.O.P.E. and choke lines. Cleaned pits and filled with lease water. Ran in with 7-5/8" Bit #31 and located top of cement at 7,535' (float collar at 7,541').

11-29 55th Day. Laid down 4-1/2" drill pipe. Changed to 3-1/2" pipe rams. Tested 3-1/2" rams and blind rams to 4,000 psi, Hydril to 3,000 psi with water and nitrogen. Also tested choke manifold to 4,000 psi. Changed from 10 lines to 8 lines.

11-30 56th Day. Finished picking up 3-1/2" drill pipe, installing casing protector rubbers on each joint. Drilled out cement and float collar at 7,541'.

12-1 57th Day. Drilled cement to 7,658' with 7-5/8" Bit #31. Pulled out and ran Welex cement Bond and Neutron Log and recorded from 7,658' to 4,200'. Pressure tested 8-5/8" casing from 7,658' to surface with 2,500 psi, O.K. Pressure tested choke manifold to 2,500 psi. Ran in and shot four 1/2" holes at 7,570' using Welex correlations and reference collars. Pressure tested holes which broke down at 20 cu.ft. per minute at 2,400 psi. Ran in with drillable cement retainer.

12-2 58th Day. Set cement retainer at 7,500'. Mixed and pumped 100 sacks of Latex cement, final squeeze pressure 2,000 psi. Pulled out of retainer and circulated. Mixed and pumped 100 sacks of Latex cement and squeezed 97 cu.ft. thru holes at 7,570' at 3,000 psi. Pulled Stinger. Ran 7-5/8" bit and drilled out retainer at 7,502' and cement to 7,545' with Bit #32.

12-3 59th Day. Drilled out cement from 7,545' to 7,600'. Circulated well clean. Pulled out of well. Pressure tested holes at 7,570' with 2,200 psi for 20 minutes, O.K. Welex shot four 1/2" holes at 7,569'. Pressure tested holes with 2,200 psi for 20 minutes, O.K. Made up Lynes tester and started in hole.

12-4 60th Day. Ran in well with Lynes Tester. Set packer at 7,541'. Opened tools and tested holes at 7,569' for one hour WSO test. Pulled out of well. Test was approved by D.O.G. Ran in well to 7,600'. Cleaned mud tanks. Changed over to 82# cu.ft. Brine-polymer completion fluid. Drilled out cement from 7,600' to 7,651' with Bit #33.

12-5 61st Day. Drilled out 8-5/8" casing shoe at 7,652'. Drilled 7-7/8" hole from 7,652' to 7,707' with Bit #34.

SANTA PAULA, CALIFORNIA

12-6 62nd Day. Drilled 7-5/8" hole from 7707' to 7820' with Bit #35 and to 7855' with Bit #36. Pulled out of well. Ran Welex Induction log and compensated density and neutron log from 7855' up to 7652'.

12-7 63rd Day. Ran in hole with Tri-State 7-1/4" x 15" hole opener. Opened 7-5/8" hole to 15" from 7653' to 7696' with hole opener #1 and to 7733' with hole opener #2.

12-8 64th Day. Opened 7-5/8" hole to 15" from 7733' to 7738' with hole opener #2 and to 7766' with hole opener #3. Pulled out of well. Made up 7-5/8" rerun bit.

12-9 65th Day. Reamed and cleaned out 7-5/8" hole from 7766' to 7852'. Circulated hole clean. Pulled out of well. Ran Tri-State 7-1/4" x 15" hole opener and opened 7-5/8" hole to 15" from 7766 to 7801' with hole opener #4.

12-10 66th Day. Hole taking fluid. Increased mud volume. Opened 7-5/8" hole to 15" from 7801' to 7808' with hole opener #5 and to 7811' with hole opener #6. Hole has taken a total of 700 barrels of fluid.

12-11 67th Day. Opened 7-5/8" hole to 15" from 7811' to 7815'. Ran in with 7-1/2" flat bottom mill and cleaned out 7-5/8" hole to 7855'.

12-12 68th Day. Opened 7-5/8" hole to 15" from 7815' to 7852' with hole opener #8. Ran in and gauge reamed 15" hole from 7652' to 7852' with hole opener #9.

12-13 69th Day. Circulated and cleaned out fill from 7840' to 7852'. Rigged up and ran Dresser Atlas Caliper log from 7855' to 7652'. Ran in with R. R. 7-5/8" Bit #36 to 7852'. Circulated well clean.

12-14 70th Day. Ran in with 7-5/8" bit to 7852' and changed over to filtered gravel pack fluid. Ran 288' of 5-1/2" liner. Bottom 200' 5-1/2" 20# K-55 ST&C 10 mesh Wire Wrapped with closed shoe and B&W gravel packing type centralizers over each collar. 41' 5-1/2" 20# K-55 ST&C blank with welded centralizers for 8-5/8" 40# casing, 47' 5-1/2" 20# K-55 ST&C 10 mesh Wire Wrapped with Burns Port collar and Burns Lead Seal Liner Hanger and hung at 7554'. (total liner 294').
Pressure tested Lead Seals to 1,200 psi. O.K.

12-15 71st Day. Circulated well clean. Gravel flow packed liner with 232 sacks of 20-40 gravel. Backscuttled out 4 sacks. Final pressure 1,150 psi.

12-16 72nd Day. Ran in with washing tool and washed liner from 7555' to 7849'. Ran in and repacked liner with 4 sacks 20-40 gravel. Closed port collar and pressure tested same to 1,000 psi. Pulled out. Final packing pressure 1,150 psi.

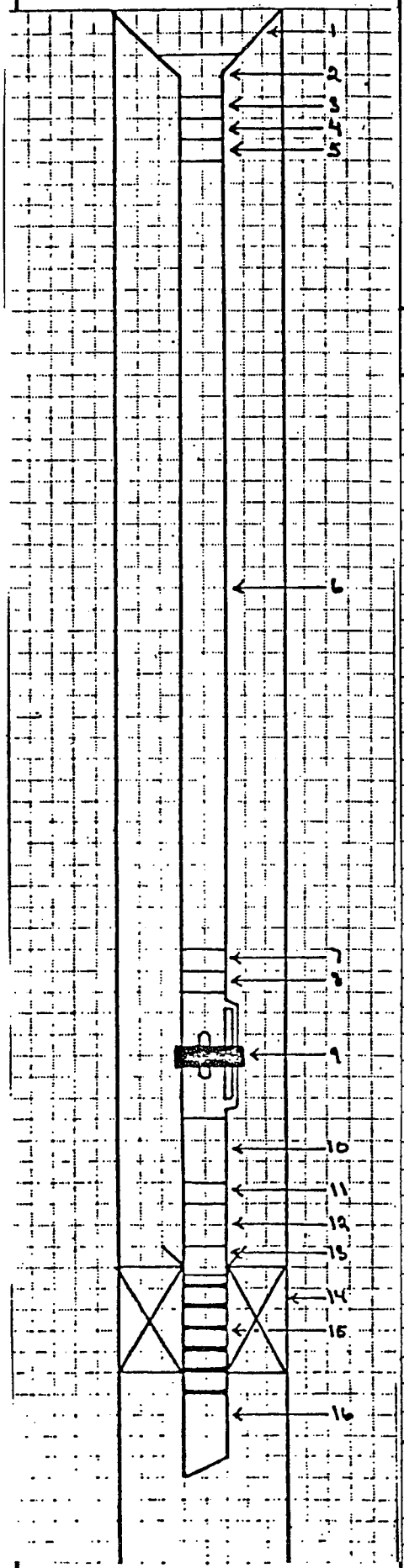
12-17 73nd Day. Ran Dresser Atlas Photon Log from 7500' to 7852'. Ran 8-5/8" 40# Baker "Retrieva D" Packer on Welex wire line and set same at 7500'. Ran in with 3-1/2" drill pipe, 8 drill collars and laid down 3-1/2" pipe, removing rubbers from each joint.

12-18 74th Day. Picked up 3-1/2" tubing with test seals on bottom. Stabbed into packer at 7500' and pressure tested packer and seals with 1,500 psi for 30 minutes. Measured tubing out of well. Ran in with Otis Annular Flow Safety System hydro-testing tubing to 5,000 psi for one minute test. Also cleaning boxes and pins and applying Baker seal.

12-19 75th Day. Finished hydrotesting tubing. Spaced out and landed tubing on packer with 18,000#. Installed back pressure valve, removed BOPE and installed Xmas tree. Pressure tested tree to 5,000 psi. Changed over to lease water.

12-20 75th Day. Clean pits.
Released Rig @ 6:00 a.m.

WELL PROFILE



OPERATOR So. Calif. Gas Co.

WELL # Fernando Fee #34-A

FIELD Aliso Canyon

COUNTY Los Angeles

STATE California

DATE 12-19-80

☒ NEW COMPLETION ☐ WORKOVER

	CASING	LINER	TUBING 1	TUBING 2	TUBING 3
SIZE	8 5/8"				
WEIGHT	36#				
GRADE					
THREAD					
DEPTH					

DIVISION OF OIL AND G
RECEIVED
FEB -8 1980
SANTA BARBARA, CALIFORNIA

ITEM NO.	TUBING DETAILS	LENGTH	DEPTH
1.	K.B. to Tubing Hanger	18.9	0
2.	Tubing Hanger	.45	18.9
3.	Pup Joint 3 1/2" 9.3# J-55 8rd EUE	3.72	19.35
4.	Pup Joint 3 1/2" 9.3# J-55 8rd EUE	6.18	23.07
5.	Pup Joint 3 1/2" 9.3# J-55 8rd EUE	10.25	29.25
6.	233 Joints 3 1/2" 9.3# J-55 8rd EUE	6945.47	39.50
7.	15 Joints 3 1/2" 9.3# N-80 8rd EUE	469.35	6984.37
8.	Pup Joints 3 1/2" 9.3# N-80 8rd EUE	4.07	7454.32
9.	Otis "X" Nipple 3 1/2" 2.813" I.D.	1.17	7458.39
10.	Otis 3 1/2" Annular Flow Safety System w/blast shield 7.0" O.D. 2.750 I.D.	9.04	7459.56
11.	Otis 3 1/2" Blast Joint 4.5" O.D. 3.0" I.D.	20.15	7468.60
12.	Otis "RN" No-Go Nipple 2.562" by 2.329" No-Go	1.27	7488.75
13.	Otis 3 1/2" Blast Joint 4.5" O.D. 3.0" I.D.	9.98	7490.02
14.	Baker Locator Sub 4.75 O.D.	1.00	7500.00
15.	Baker 8 5/8" Retrieva "D" Packer		7500.00
16.	Baker Seals (6) 3.875" O.D. 3.0" I.D.	6.71	7501.00
17.	Baker Production Tube 2.441 I.D.	6.25	7507.71
	End of Tubing		7513.96
	Tubing landed in compression : 18,000#		
	Top of Packer 7,500' W/L		

COMMENTS:

Completion Procedure

Ray Chavers - Otis Engineering

Sante Fe Spring 213-864-3701

Eastman Whipstock
A PETROLANE COMPANY

REPORT of SUB-SURFACE DIRECTIONAL SURVEY

SOUTHERN CALIFORNIA GAS COMPANY
COMPANY

FF-34A
WELL NAME

ALISO CANYON, CA.
LOCATION

JOB NUMBER	TYPE OF SURVEY	DATE
P-1079-D0104	SINGLE SHOT	08 OCT 79

SURVEY BY LONG BEACH OFFICE

FORM D-302 R2

SOUTHERN CALIFORNIA GAS CO.
WELL NO: FF-34A
ALISO CANYON , CA.

FILE: F25-6 JOB NO: P-1079-D0104
SINGLE SHOT SURVEY
DATE: 08 OCT 79

VERTICAL SECTION CALCULATED IN PLANE OF PROPOSAL
DIRECTION: N 32 DEG. 15 MIN W

Eastman Whipstock
A PETROLANE COMPANY

RECORD OF SURVEY

RADIUS OF CURVATURE METHOD

OUTHERN CALIFORNIA GAS CO. FILE: F25-6 JOB NO: P-1079-D0104 COMPUTATION PAGE NO. 1
ELL NO: FF-34A SINGLE SHOT SURVEY TIME DATE
LISO CANYON , CA. DATE: 08 OCT 79 00:08:12 00--00

MEASURED DEPTH FEET	DRIFT ANGLE D M	DRIFT DIRECTION D M	COURSE LENGTH FEET	TRUE VERTICAL DEPTH FEET	VERTICAL SECTION FEET	RECTANGULAR COORDINATES FEET		DOGLEG SEVERITY DG/100FT
0.	0 0	0 0	0.	0.00	0.00	0.00	0.00	0.00
169.	1 0	N 89 0 W	169.	168.99	0.81	0.03 N	1.47 W	0.59
362.	2 0	N 89 0 W	193.	361.92	3.58	0.11 N	6.53 W	0.52
543.	1 0	S 81 0 W	181.	542.86	5.82	0.22 S	11.25 W	0.57
762.	3 0	S 11 0 W	219.	761.71	4.36	5.20 S	16.41 W	1.29
857.	3 15	S 23 0 W	95.	856.57	0.98	10.14 S	17.92 W	0.74
981.	2 45	S 13 0 W	124.	980.40	-3.16	16.31 S	19.92 W	0.58
1090.	2 45	S 19 0 W	109.	1089.28	-6.64	21.33 S	21.36 W	0.26
1185.	2 0	S 1 0 W	95.	1184.19	-9.54	25.19 S	22.04 W	1.10
1304.	2 0	S 5 0 W	119.	1303.12	-12.93	29.34 S	22.26 W	0.12
1392.	2 0	S 1 0 W	88.	1391.07	-15.44	32.41 S	22.42 W	0.16
1541.	2 0	S 21 0 W	149.	1539.98	-19.21	37.48 S	23.41 W	0.47
1696.	3 45	S 31 0 W	155.	1694.78	-28.30	44.46 S	26.81 W	1.17
1832.	5 0	S 36 0 W	136.	1830.38	-27.56	53.11 S	32.54 W	0.96
1936.	4 45	S 26 0 W	104.	1934.00	-31.53	60.68 S	37.08 W	0.85
2070.	5 15	S 26 0 W	134.	2067.49	-37.68	71.18 S	42.20 W	0.37
2187.	6 30	S 34 0 W	117.	2183.87	-43.25	81.54 S	48.19 W	1.27
2252.	5 45	S 29 0 W	65.	2248.50	-46.31	87.45 S	51.81 W	1.41
2346.	5 30	S 22 0 W	94.	2342.05	-51.23	95.76 S	55.77 W	0.78
2440.	4 45	S 16 0 W	94.	2435.67	-56.48	103.70 S	58.51 W	0.98
2562.	3 15	S 21 0 W	122.	2557.37	-61.86	111.77 S	61.21 W	1.26
2657.	2 30	S 15 0 W	95.	2652.25	-64.91	116.30 S	62.68 W	0.85
2814.	1 30	S 10 0 W	157.	2809.15	-68.80	121.64 S	63.86 W	0.65
2970.	1 0	S 1 0 W	156.	2965.12	-71.49	125.03 S	64.19 W	0.34
3126.	0 15	S 4 0 E	156.	3121.11	-72.95	126.73 S	64.15 W	0.48
3283.	0 0	0 0	157.	3278.11	-73.25	127.07 S	64.12 W	0.16
3468.	0 15	S 6 0 W	185.	3463.11	-73.57	127.47 S	64.16 W	0.14
3624.	0 15	S 1 0 W	156.	3619.10	-74.12	128.15 S	64.20 W	0.01
3810.	0 30	N 79 0 W	186.	3805.10	-74.24	128.82 S	65.04 W	0.32
3995.	0 15	N 19 0 E	185.	3990.10	-73.17	127.90 S	65.57 W	0.32

MEASURED DEPTH FEET	DRIFT ANGLE D M	DRIFT DIRECTION D M	COURSE LENGTH FEET	TRUE VERTICAL DEPTH FEET	VERTICAL SECTION FEET	RECTANGULAR COORDINATES FEET	DOGLEG SEVERITY DG/100FT
4180.	0 15	N 69 0 W	185.	4175.09	-72.45	127.23 S 65.88 W	0.19
4366.	0 0	0 0	186.	4361.09	-72.13	127.09 S 66.26 W	0.13
4458.	0 15	S 64 0 E	92.	4453.09	-72.30	127.18 S 66.08 W	0.27
4505.	1 0	S 26 0 W	47.	4500.09	-72.75	127.61 S 65.93 W	2.19
4536.	1 0	S 78 0 W	31.	4531.09	-72.80	127.93 S 66.34 W	2.83
4567.	1 15	N 69 0 W	31.	4562.08	-72.44	127.89 S 66.94 W	2.20
4598.	2 0	N 39 0 W	31.	4593.07	-71.63	127.38 S 67.64 W	3.58
4630.	2 30	N 19 0 W	32.	4625.04	-70.38	126.28 S 68.25 W	2.89
4661.	3 15	N 34 0 W	31.	4656.00	-68.84	124.90 S 68.94 W	3.41
4692.	3 45	N 59 0 W	31.	4686.94	-67.02	123.60 S 70.30 W	5.13
4737.	5 30	N 74 0 W	45.	4731.80	-64.03	123.16 S 73.62 W	4.70
4812.	5 20	N 56 0 W	75.	4806.46	-58.10	119.18 S 80.01 W	2.27
4868.	6 15	N 39 0 W	56.	4862.17	-52.69	115.38 S 84.16 W	3.46
4929.	6 15	N 25 0 W	61.	4922.81	-46.05	109.76 S 87.67 W	2.49
4960.	6 45	N 30 0 W	31.	4953.61	-42.55	106.65 S 89.29 W	2.43
4988.	7 15	N 28 0 W	28.	4981.40	-39.14	103.66 S 90.94 W	1.99
5052.	7 15	N 29 0 W	64.	5044.89	-31.08	96.57 S 94.80 W	0.20
5144.	7 0	N 31 0 W	92.	5136.18	-19.68	86.69 S 100.50 W	0.38
5303.	9 15	N 29 0 W	159.	5293.58	2.77	67.23 S 111.74 W	1.43
5428.	12 0	N 27 0 W	125.	5416.42	25.75	46.88 S 122.55 W	2.22
5551.	13 30	N 26 0 W	123.	5536.38	52.76	22.59 S 134.67 W	1.23
5703.	16 45	N 24 0 W	152.	5683.10	92.09	13.35 N 151.43 W	2.17
5797.	16 15	N 21 0 W	94.	5773.23	118.40	38.01 N 161.64 W	1.05
5891.	16 0	N 24 0 W	94.	5863.53	144.13	62.13 N 171.63 W	0.93
5984.	15 30	N 24 0 W	93.	5953.04	169.11	85.19 N 181.90 W	0.54
6077.	15 30	N 22 0 W	93.	6042.66	193.64	108.07 N 191.61 W	0.57
6201.	15 0	N 21 0 W	124.	6162.29	225.68	138.41 N 203.56 W	0.46
6264.	14 45	N 20 0 W	63.	6223.18	241.52	153.56 N 209.23 W	0.57
6357.	14 15	N 24 0 W	93.	6313.22	264.43	175.15 N 217.95 W	1.20
6450.	14 0	N 21 0 W	93.	6403.40	286.79	196.11 N 226.63 W	0.83

UTHERN CALIFORNIA GAS CO. FILE: F25-6 JOB NO: P-1079-D0104 COMPUTATION PAGE NO. 3
LL NO: FF-34A SINGLE SHOT SURVEY TIME DATE
ISO CANYON , CA. DATE: 08 OCT 79 00:08:12 00--00

MEASURED DEPTH FEET	DRIFT ANGLE D M	DRIFT DIRECTION D M	COURSE LENGTH FEET	TRUE VERTICAL DEPTH FEET	VERTICAL SECTION FEET	RECTANGULAR COORDINATES FEET	DOGLEG SEVERITY DG/100FT
6542.	14 0	N 21 0 W	92.	6492.67	308.62	216.89 N 234.61 W	0.00
6605.	14 0	N 21 0 W	63.	6553.80	323.57	231.12 N 240.07 W	0.00
6679.	13 45	N 20 0 W	74.	6625.64	340.94	247.74 N 246.28 W	0.47
6805.	13 0	N 21 0 W	126.	6748.22	369.48	275.04 N 256.49 W	0.62
6863.	12 45	N 21 0 W	58.	6804.76	382.15	287.11 N 261.12 W	0.43
7016.	12 45	N 22 0 W	153.	6953.99	415.33	318.52 N 273.50 W	0.14
7170.	12 45	N 22 0 W	154.	7104.19	448.77	350.04 N 286.23 W	0.00
7325.	13 0	N 20 0 W	155.	7255.30	482.64	382.28 N 298.60 W	0.33
7511.	14 0	N 14 0 W	186.	7436.16	524.52	423.78 N 311.29 W	0.92
7646.	13 45	N 11 0 W	135.	7567.22	554.99	455.39 N 318.30 W	0.56
7662.	13 45	N 11 0 W	16.	7582.76	558.53	459.12 N 319.03 W	0.00
7850.	13 45	N 11 0 W	188.	7765.77	609.18	502.99 N 327.55 W	0.00

IRVEY AT STATION 7850' IS A PROJECTED SURVEY.

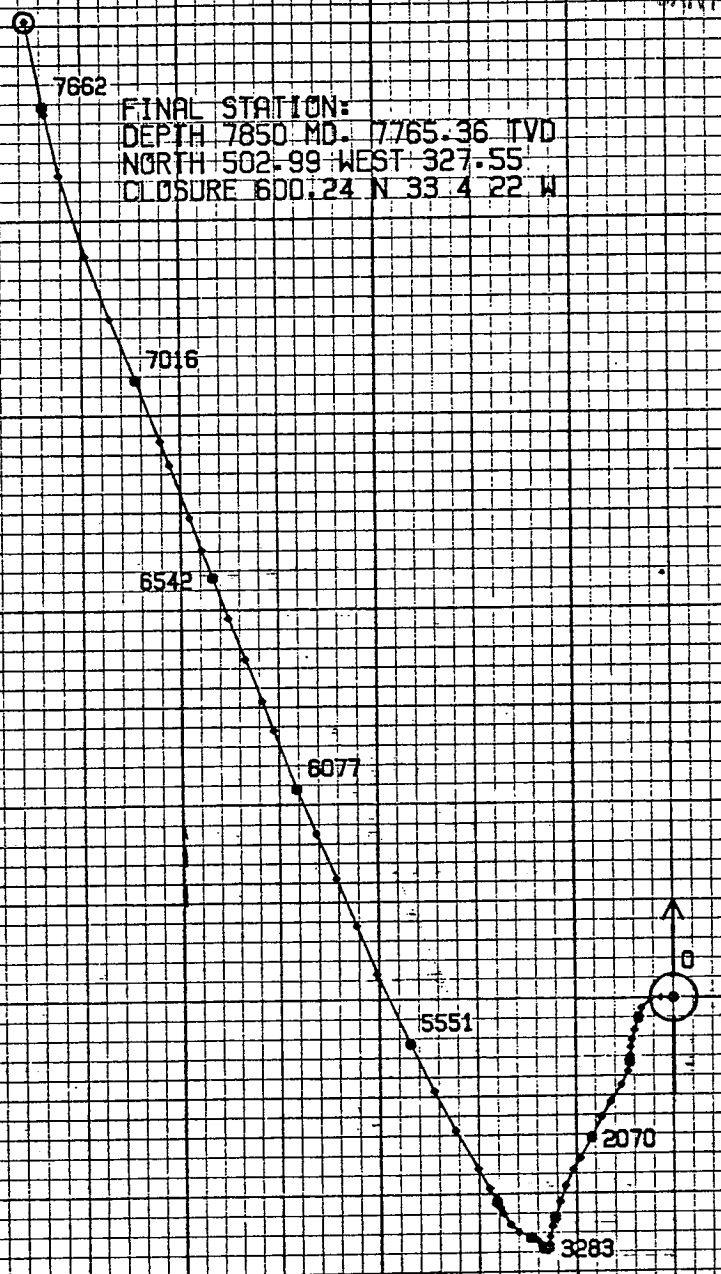
FINAL CLOSURE - DIRECTION: N 33 DEGS 4 MINS W
DISTANCE: 600.24 FEET

SOUTHERN CALIFORNIA GAS COMPANY
WELL NO: AF-34A FILE: 25-6
LOCATION: ALISO CANYON, CA.

EASTMAN WHIPSTOCK, INC.

HORIZONTAL PROJECTION

SCALE 1 IN. = 100 FEET
DEPTH INDICATOR: MD



JOB #: R-1079-D0104

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

No. T 279-311

DIVISION OF OIL AND GAS

Report on Operations

Mr. J. W. Tenfelder, Agent
Southern California Gas Co.
12801 Tampa Avenue
Northridge, CA 91324

Santa Paula Calif.
December 21, 1979

Your operations at well "SFZU" FF-34-A, API No. 037-22044, Sec. 34, T. 3N, R16W S.B., B.& M. Aliso Canyon Field, in Los Angeles County, were witnessed on 12/4/79. Mr. S. Curran, representative of the supervisor, was present from 0500 to 0900. There were also present Mr. H. Peak, driller

Present condition of well: 13 3/8" cem. 1003'; 8 5/8" cem. 7652', c.p. 7570', perf. 7569' WSO. T.D. 7670 (drilling).

The operations were performed for the purpose of demonstrating a water shut off on the 8 5/8" casing by means of a formation tester.

DECISION:

THE 8 5/8" SHUT-OFF AT 7569' IS APPROVED.

r

M. G. MEFFERD
State Oil and Gas Supervisor

By
Deputy Supervisor
John L. Hardoin

OG109 (6-77-GSRI-15M)

DIVISION OF OIL AND GAS

WATER SHUT-OFF TEST

No. T 311 PW

Operator Southern California Gas Company

Well name and no. "SFZ4"-34-A Sec. 34, T. 3, R. 13, SB B&M

Field Aliso Cyn, County Los Angeles was tested for water shut-off on 12/4/79, Mr. Scurran, representative of the supervisor was present from 0500 to 0900. There were also present H. Peak Driller

Casing record of well: 13 3/8" cem 1003'; 8 5/8" cem 7652, cp 7570, perf 7569 w 50

TD 7670 (Pulling)

The operations were performed for the purpose of O. S. (8 5/8") H.

☒ The 8 5/8" shut-off at 7569' is approved.

☐ The seal between the _____" and _____" casings is approved.

☐ The operations are approved as indicating that all of the injection fluid is confined to the formations below _____' at this time.

Hole size: 12 1/4" fr. 1003' to 7670', _____" to _____' & _____" to _____'

Casing				Cemented			Top of Fill		Sqd. Away	Final Press	Test psi/min. Perfs.
Size	Wt.	Top	Bottom	Date	MO-Depth	Volume	Annulus	Casing			

CP @ 7570 cement details - squeezed away 100 sks class G cement

Depth or interval tested 4 1/2" holes 7569

The hole was open to _____' for test.

FORMATION TEST:

Packer(s) 7541' & —' Tail 7560' Bean size 5/8" Cushion —

IHP 3290 IFP 25 FFP 25 FHP 3290

Blow Lite Blow 20 min - dead REMAINDER

Open for test 1 Hr. — min. Fluid entry 10' hole fluid.

BAILING TEST:

The hole fluid was bailed to _____', at _____ on _____ 19__.

The hole fluid was found at _____', at _____ on _____ 19__.

(time)

PRODUCTION TEST:

Gauge/meter reading _____ on _____ 19__, at _____ pump depth _____' Engr. _____

Gauge/meter reading _____ on _____ 19__, at _____ Engr. _____

Fluid level _____' surveyed on _____ 19__, reviewed (witnessed) by _____

Total fluid produced, Bbls. _____ Net oil _____ Water _____

Rate: _____ B/D oil, _____ B/D water, _____ % water cut

INJECTION SURVEY:

RA/Spinner/Temperature survey run at _____ B/D & _____ psi on _____ 19__, fluid confined below _____' (Packer depth _____')

OGD8 (10-78-GSRI-5M)

PW

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

No. T 279-255

DIVISION OF OIL AND GAS

Report on Operations

Mr. J. W. Tenfelder, Agent
Southern Calif. Gas Company
12801 Tampa Avenue
Northridge, CA 91324

Santa Paula Calif.
October 18, 1979

Your operations at well "SFZU" FF-34-A, API No. 037-22044, Sec. 34, T3N, R16W S.B., B.& M. Aliso Canyon Field, in Los Angeles County, were witnessed on 10/11/79. Mr. Ed Hickey, representative of the supervisor, was present from 1630 to 2030. There were also present A. Colbert, foreman

Present condition of well: 13 3/8" cem. 1003'. T.D. 1010'.

The operations were performed for the purpose of testing the blowout prevention equipment and installation.

DECISION:

THE BLOWOUT PREVENTION EQUIPMENT AND INSTALLATION ARE APPROVED.

F

M. G. MEFFERD
State Oil and Gas Supervisor

By
Deputy Supervisor

OG109 (6-77-GSRI-15M)

DIVISION OF OIL AND GAS
...WOUT PREVENTION EQUIPMENT MEM...

T 25S

...rator SoCal Gas Company Well FF 34A Field ALISO CANYON County LA

VISITS: Date Engineer Time Operator's Rep. Title
1st 10/2/79 E. Hickey 1630 to 2030 A. Colbert foreman
2nd ____ ____ ____ to ____ ____ ____

Casing record of well: 13⅜ cem. 1003. TD 1...

OPERATION: ~~Testing (inspecting)~~ the blowout prevention equipment and installation.
DECISION: The blowout prevention equipment and installation are approved.

...roposed Well Opns: New drill MPSP: ____ psi
...ole size: ____" fr. ____' to ____', ____" to ____' & ____" to ____'

REQUIRED BOPE CLASS: II 1M

CASING RECORD (BOPE ANCHOR STRING ONLY)					Cement Details	Top of Cement	
...ize	Weight(s)	Grade (s)	Shoe at	CP at		Casing	Annulus
13⅜	K	K-55	1003		1000 sx "G" w/ 2% CaCl2		surf

BOP STACK							a	b	a/b	TEST DATA			
...I mb.	Ram Sz.	Mfr.	Model or Type	Size In.	Oper. Press	Date Last Overhaul	Gal. to Close	Rec.Time Min.	Calc.GPM Output	psi Drop to Close	Secs.to Close	Test Date	Test Press
		Hydril	5K	13⅝	5000				3.1			10/1/79	
	4½	Shaffer	LWS	13⅝	5M	8-21-79		2	3.1	800	5	10/1/79	
	4½	Shaffer	LWS	13⅝	5M	8-21-79			3.1				2000
			Annular										

ACTUATING SYSTEM			
...cum.Unit(s) Wkg.Press. 3000 psi			
...tal Rated Pump Output ____ gpm			
...stance From Well Bore ____ ft.			
Mfr.	Accum. Cap.	Precharge	
Hydril	80 gal.	1500 psi	
3.1 gpm	gal.	psi	
...NTROL STATIONS		Elec.	Hyd.
Manif. at accum.unit			X
Remote at Drlr's stn.		X	
Other:			
...ERG. BACKUP SYST.	Press.	Wkg.Fl.	
N2 Cyl No: 3 Tpe: G	1 2300	gal	
Other:	2 2300	gal	
	3 2200	gal	
	4	gal	
	5	gal	
	6	gal	

AUXILIARY EQUIPMENT								
		No.	Sz. (in)	Rated Press.	Connections Weld	Flan.	Thrd.	
X	Fill-Up Line	X	X	X	X	X	X	X
X	Kill Line	X	3	5M	X	X	X	✓
X	Control Valve(s)	3	X	✓		X		2500
X	Check Valve(s)	1	X	✓		X		✓
X	Auxil. Pump Connec.	X	X	✓			X	✓
X	Choke Line	X	3	✓	X	X	X	2500
X	Control Valve(s)	2	X	✓		X		✓
X	Pressure Gauge	X	X	X	X	X	X	X
X	Adjustable Choke(s)	2	2	✓			X	✓
X	Bleed Line	X	2	X	X	X	X	X
X	Upper Kelly Cock	X	X	X	X	X	X	✓
X	Lower Kelly Cock	X	4½	✓	X	X	X	✓
X	Standpipe Valve	X	X	X	X	X	X	X
X	Standpipe Pressure Ga.	X	X	X	X	X	X	X
X	Pipe Safety Valve	X	4½	✓	X	X	X	X
X	Internal Preventer	X	4½	✓	X	X	X	X

HOLE FLUID MONITORING EQUIPMENT	Alarm Aud.	Alarm Vis.	Class
X Calibrated Mud Pit	X	X	A
X Pit Level Indicator	X	X	B
X ...ump Stroke Counter	X	X	B
X ...it Level Recorder	X	X	C
X Flow Sensor	X	X	C
Mud Totalizer			C
Calibrated Trip Tank			
Other:			

REMARKS: ____

Hole Fluid Type	Weight	Storage-Pits

...9 (2-77-GSR1-1M)

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL AND GAS

No. P 279-270

REPORT ON PROPOSED OPERATIONS

010 (field code)
03 (area code)
30 (pool code)

Mr. J. W. Tenfelder, Agent
Southern Calif. Gas Company
12801 Tampa Avenue
Northridge, CA 91324

Santa Paula, California
Sept. 12, 1979

Your proposal to drill gas storage well "SFZU" FF-34-A,
A.P.I. No. 037-22044, Section 34, T. 3N, R. 16W, S.B. B. & M.,
Aliso Canyon field, Main area, Sesnon-Frew pool,
Los Angeles County, dated 8/24/79, received 9/6/79 has been examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED THAT:

1. Sufficient cement shall be pumped back of the 13 3/8" casing to fill to the surface
2. Hole fluid of sufficient quality and quantity shall be maintained in the hole to control any subsurface condition, and a reserve supply shall be on hand for emergencies.
3. Unlined sumps, if they contain harmful waters, shall not be located over fresh wate bearing aquifers.
4. Any sump used during these operations shall be thoroughly cleaned and filled with earth as soon as operations are completed.
5. Blowout prevention equipment of at least DOG Class III 1M B shall be installed on the 13 3/8" casing and Class III 3M B on the 8 5/8" casing, and maintained in operating condition at all times.
6. This office shall be consulted before placing any plugs.
7. The spacing provisions of Section 3606 shall be followed.
8. A subsurface directional survey shall be made.
9. THIS DIVISION SHALL BE NOTIFIED TO WITNESS:
   a. A pressure test of the blowout prevention equipment before drilling below 1000'
   b. A test of the 8 5/8" shut-off above the zone to be produced.

Blanket Bond
MD:b

A copy of this report must be posted at the well site prior to commencing operations.

M. G. MEFFERD, State Oil and Gas Supervisor

By John L. Hardoin, *Deputy Supervisor*

OG111 (1-79-GSRI-5M)

DIVISION OF OIL AND G[illegible]
Notice of Intention to Drill New Well

PW

25-22647

C.E.Q.A. INFORMATION			
EXEMPT ☐ CLASS____	NEG. DEC. ☐ S.C.H. NO.____	E.I.R. ☐ S.C.H. NO.____	DOCUMENT NOT REQUIRED BY LOCAL JURISDICTION ☒
See Reverse Side			

FOR DIVISION USE ONLY					
MAP	MAP BOOK	CARDS	BOND	FORMS 114	FORMS 121
254	9-15-11 EH	✓	155	✓	✓

In compliance with Section 3203, Division 3, Public Resources Code, notice is hereby given that it is our intention to commence drilling well "SFZLL" FF-34-A ~~Fernando Fee~~ 34-A, API No.____ (Assigned by Division),

Sec. 34, T. 3N, R. 16W, S.B. B. & M., Aliso Canyon Field, Los Angeles County.

Legal description of mineral-right lease, consisting of____ acres, is as follows: (Attach map or plat to scale)

DIVISION OF OIL AND GAS
RECEIVED
SEP 6 1979
SANTA PAULA, CALIFORNIA

360

Previously Submitted

Do mineral and surface leases coincide? Yes____ No____ If answer is no, attach legal description of both surface and mineral leases, and map or plat to scale.

Location of well____ feet____ (Direction) along section / property line (Cross out one) and____ feet____ (Direction)

at right angles to said line from the____ corner of section / property (Cross out one) ____ or

4073' south and 2158' east from station 84

Is this a critical well according to the definition on the reverse side of this form? Yes ☐ No ☒

If well is to be directionally drilled, show proposed coordinates (from surface location) at total depth:
525 feet North (Direction) and 341 feet West (Direction)

Elevation of ground above sea level 2212 feet.

All depth measurements taken from top of Kelly Bushing (Derrick Floor, Rotary Table, or Kelly Bushing) that is 19 feet above ground.

PROPOSED CASING PROGRAM

SIZE OF CASING INCHES API	WEIGHT	GRADE AND TYPE	TOP	BOTTOM	CEMENTING DEPTHS	CALCULATED FILL BEHIND CASING
13-3/8"	54.5	K-55 Butt.	Surf.	1000'	1000' ✓	To Surface
8-5/8"	36&40	N-80 Butt.	Surf.	7700'	7700'	To 4000'
5-1/2"	20	K-55 LT&C	7600'	8000'	Gravel Pack Screen Liner	-

(A complete drilling program is preferred and may be submitted in lieu of the above program.)

Intended zone(s) of completion Sesnon (S-4 and S-8), 3200 psi (Name, depth, and expected pressure) Estimated total depth 8000'

It is understood that if changes in this plan become necessary we are to notify you immediately.

Name of Operator	Type of Organization (Corporation, Partnership, Individual, etc.)	
Southern California Gas Company	Corporation	
Address	City	Zip Code
P.O. Box 3249 Terminal Annex	Los Angeles, CA	90051
Telephone Number	Name of Person Filing Notice	Signature / Date
213-689-3561	P. S. Magruder, Jr. PSM	P. S. Magruder, Jr. 8/24/79

This notice and indemnity or cash bond shall be filed, and approval given, before drilling begins. If operations have not commenced within one year of receipt of the notice, this notice will be considered cancelled.

OG105 (7-78-GSRI-5M)